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GENDER AND TRADE LIBERALIZATION IN BANGLADESH: THE CASE OF THE READY-MADE GARMENTS

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GENDER AND TRADE LIBERALIZATION IN BANGLADESH: THE CASE OF THE READY-MADE GARMENTS

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ACRONYMS

BBS	Bangladesh Bureau of Statistics
BGMEA	Bangladesh Garment Manufactures and Exports Association
BIDS	Bangladesh Institute of Development Studies
CGE	Computable general equilibrium
CM	Cutting-and-making
CPD	Centre for Policy Dialogue
EBA	Everything But Arms
EPB	Export Promotion Bureau
EPZ	Export Processing Zone
EU	European Union
FY	Financial Year
GDP	Gross domestic product
GSP	Generalized System of Preferences
HSC	Higher Secondary Certificate
ILO	International Labor Organization
IMF	International Monetary Fund
ISS	Institute of Social Studies
MFA	Multifibre Arrangement
NGOs	Nongovernmental organizations
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Square
RMG	Ready-made garments
SSC	Secondary School Certificate
Tk	Taka
TNCs	Transnational corporations
TU	Trade union
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNRISD	United Nations Research Institute for Social Development
U.S.	United States
WWC	Worker's Welfare Committee
WTO	World Trade Organization

I. BACKGROUND

The emergence of the export-oriented, ready-made garments (RMG) sector in Bangladesh in the 1980s resulted from a combination of factors, including a conducive global environment, policy reforms within the country, and the entrepreneurship of the nascent private sector.

Since the mid-1980s, under the auspices of the World Bank and International Monetary Fund Structural Adjustment Policy and other policy initiatives, important changes have taken place in the policy regime in Bangladesh, stimulating industrial investment in the country's private sector. To provide a supportive environment for trade and investment, tariffs were increasingly rationalized, leading to a decline in the tariff rate from 350 percent in 1990 to 25 percent in 2006-07. (Bangladesh Bank Annual Reports, various years; World Bank, 2005). Bangladesh also participated in market-opening trade agreements at the regional and bilateral levels.[1] In fact, trade liberalization policies related to tariff reduction and duty and various export and fiscal incentives, coupled with increased global demand for textiles and clothing, paved the way for a flourishing export-oriented RMG sector.

The growth of the sector owes much to the quota facilities provided by the importing countries under the Multi-Fibre Arrangements (MFA) and zero tariff access to several developed country markets, most notably the European Union (EU) under the EC Generalized System of Preferences (GSP).[2] The development of domestic supply capacities such as bonded warehouse facilities, duty drawback incentives, cash compensation schemes; and the ease of procuring raw materials, especially fabrics under back-to-back letters of credit, also spurred the sector's growth. Moreover, the availability of less expensive female labor than in many other developing countries gave Bangladesh a comparative advantage in the global market. In 2003, the minimum wage in the RMG sector in Bangladesh was US$10 per month for the non-export-processing zone area workers and US$30 for export-processing zone workers, while the minimum wage was US$45 for regular workers in Cambodia, US$43.25 for unskilled workers in Pakistan, and US$ 22 for workers of Xianzi area in China (ILO Website, accessed on November 14, 2006). In October 2006, the minimum wage for RMG workers in Bangladesh was fixed at 1,662.5 taka (about US$24), which is still lower than in other competing countries. The minimum wage of a laborer in the spinning, weaving, and finishing textiles was US$26.38 in India in 2001, US$44.58 in Pakistan in 2004, and US$39.15 in Sri Lanka in 2000 (ILO website accessed in December 2006).

The expansion of this sector has not been without challenges, and the sector is currently beset with several problems. While trade liberalization has helped Bangladesh to integrate into and reap benefits from the global economic system, the country has assumed costs associated with this liberalization. Bangladesh has been facing the

[1] Bangladesh has been a member of the SAARC Preferential Trading Arrangement since 1993 and the Bangkok Agreement since 1976. Bangladesh also participates in the Bangladesh, India, Myanmar, Sri Lanka, Thailand Economic Cooperation; Trade Preferential System-Organization of Islamic Countries; and the Developing Countries-8. Bangladesh has bilateral trade agreements with several countries.

[2] Later, the market access facility was provided under the EU's Everything But Arms (EU-EBA) initiative.

challenges of quota phaseout since January 2005, which is another phase of liberalizing the global trade regime. The phase has exposed the country to competition in the global market and emerging challenges such as the removal of safeguards on imports of Chinese apparel.

The extent of global trade liberalization in apparels manifested through quota phaseout is likely to have an impact on the sector's profitability. China's entry in the global apparel market following its accession to the World Trade Organization (WTO) in 2001 is another challenge. Competition from other cheap suppliers, such as Vietnam and Cambodia, is also putting pressure on price levels and profitability. As a result of falling profits, suppliers may attempt to adjust costs through improved production processes, technological upgrades, and changes in employment.

The impact of such adjustments on women and men requires careful examination. Traditionally, the Bangladesh export-oriented RMG has depended on female labor. In the woven-RMG sector, women constitute approximately 80 percent of the workforce (Rahman, 2004), although in the knitwear sector the proportion favors male workers. While the RMG sector has created an unprecedented opportunity for a large number of young women in Bangladesh, it has also led to workplace environments in which women workers may face discrimination and other disadvantages in comparison with men. Employers believe that men are more efficient workers and this belief impedes women's job mobility—relegating most women to lower-level jobs rather than supervisory positions. Some gender-specific constraints such as early marriage, household responsibility, child-bearing and rearing, and uncertainty about returning to work after marriage might result in discrimination confining women to lower-ranking jobs, lower income, and less or no training. Whether these characteristics are still prevalent in the sector today or how the dynamics of gender issues have changed over time are matters to be investigated, as the sector is still dominated by female workers.

II. DESIGN OF THE STUDY

OBJECTIVE AND SCOPE OF THE STUDY

This study explored the gender-differentiated effect of trade liberalization in the RMG sector in Bangladesh. To investigate how adjustments occurred in response to the new competitive global environment, the study analyzed changes in the cost of production, profitability, wages, and employment during the post-MFA period. In this context, the study examined factors such as the size, type, and location of factories; and the age, sex, marital status, and education of workers. The study specifically examined the following issues:

- Key trends affecting the sector in terms of product diversification, market access, price competitiveness, and standards and compliance issues.
- Impact of MFA phaseout at the firm level in terms of prices of products, change in volume of exports, market diversification, technological upgrades, job losses, informalization, and buyer-exporter relationship.
- Nature and extent of gender-differentiated consequences of MFA phaseout in terms of employment, working condition, working hours, and wages.
- Factors behind differentiated income earnings by men and women.
- Policy recommendations to deal with the resulting impact on the employment and income of women and men due to MFA phaseout.

The study aimed to understand the general direction and magnitude of changes and the interplay of factors underpinning such changes in the RMG sector during the post MFA period. The analysis primarily focused on the gender impact of changes and adjustments in response to MFA phaseout. Consequently, a detailed examination of the relevant correlates at the macro, sector, and enterprise levels was beyond the scope of work. The study had a limited scope due to time and resource constraints. Accordingly, a comprehensive survey to gain an in-depth understanding of the emerging dynamics of the sector could not be undertaken. A limited survey was implemented to generate primary data separately for knit, woven, and sweater factories located in both Export Processing Zone (EPZ) and non-EPZ areas. The survey was complemented with the debriefing of key informants.

METHODOLOGY AND SOURCES OF DATA

The study is based on a primary survey of enterprises and workers in the RMG sector and debriefing sessions. The survey was conducted in 41 factories selected through random sampling from the list of garment manufactures collected from the Bangladesh Garment Manufacturers and Exporters Association (BGMEA). According to the list, there are 3,540 RMG factories in Bangladesh, of which 2,900 are located in Dhaka and its suburbs and 640 are in Chittagong. Data were collected from entrepreneurs and workers in factories located in the EPZ and non-EPZ areas in Dhaka and Chittagong districts. In Dhaka, 31 and 3 factories are in the non-EPZ and EPZ areas, respectively; while in Chittagong, 11 and 6 factories are in the non-EPZ and EPZ areas, respectively. In total, 32 factories were selected from the non-EPZ area and 9 from the EPZ area. Among the surveyed factories, 26 are woven, 9 are knit, and 6 are sweater factories.

The number and types of factories was determined on the basis of proportional distribution of types of factories in the population (see Table 1).

Table 1. Sample Distribution

Type of Factories	Non-EPZ	EPZ	Total	Proportional Distribution (%)
Woven	20	6	26	63.4
Knit	7	2	9	22.0
Sweater	5	1	6	15.6
Total	**32**	**9**	**41**	**100**
% of Total Factories	**78.0**	**22.0**	**100**	

The survey team interviewed 87 workers (55 female and 32 male) from 41 factories. Among the male workers, 7, 17, and 8 are from the knit, woven, and sweater factories, respectively; while among female workers, 9, 39, and 7 are from the knit, woven, and sweater factories. In total, 16 workers are from knit factories, 56 are from woven factories, and 15 are from sweater factories. Not all 87 workers are from the same factories where the officials were interviewed. Thirty-five workers are from 20 factories out of the 41 factories surveyed. The remaining 52 workers were selected from 23 factories where officials were not surveyed. The selection process was somewhat determined by the unwillingness of the management staff of some factories to allow workers to sit for the interview. An attempt was made to keep the composition of male and female workers commensurate with the sex ratio of garments workers.

The team collected information on the entrepreneurs and workers through two separate sets of structured questionnaires. To gain feedback, the questionnaires were presented in a debriefing session of stakeholders and pre-tested in a few factories. The questionnaires were then revised for the final survey. The team gathered additional information through interviews with owners, workers, trade union leaders, and buyers at several meetings in Dhaka and Chittagong. Secondary information was culled from documents by the BGMEA, Export Promotion Bureau (EPB), research institutes, and ministries; and from the websites of various organizations.

The analytical framework of the study is both qualitative and quantitative. Based on the debriefing sessions and existing information, the report presents an overview of the major trends and challenges of the sector. The report provides a comparative analysis of the situation before and after the MFA phaseout, with a particular focus on the effect on female workers due to policy changes.

The survey findings were analyzed with the help of appropriate quantitative techniques. Thus, the study undertook both bi-variate and multivariate analyses of the findings. Bi-variate analyses were done to explain the effect and extent of changes during, before and after January 2005. Multivariate analyses were carried out to explain the wage differentials between male and female workers and also to understand other determinants of the income function.

LAYOUT OF THE PAPER

Section III describes the findings from a literature review of relevant studies on the impact of trade liberalization on women and on Bangladesh's export-oriented RMG sector. Section IV presents an overview of the RMG sector related to its growth, export

performance, employment, product and market concentration, price competitiveness, and recent challenges. The remaining sections provide the survey's results and the analyses of these results. Section V describes the characteristics of sample enterprises and workers. Section VI discusses the impact of the MFA phaseout at the enterprise level, and Section VII presents the employment and income of workers. Non-income aspects such as working conditions, access to facilities, cleanliness, safety, and the health and nutritional status of workers have been addressed in Section VIII. In the concluding section, the paper delineates the post-MFA scenario in terms of the implications for women's employment and, in reflection, outlines some necessary policies.

III. LITERATURE REVIEW ON TRADE–GENDER NEXUS

The nexus between trade liberalization and gender is complex and multifaceted. Women's socioeconomic position in society is related to a number of separate but often mutually reinforcing factors. In many cases, women's asymmetric access to resources and opportunities tend to be related more to the nature of the labor market and availability of public services rather than international trade. However, international trade might reinforce existing inequalities or it might create new opportunities for women to improve their socioeconomic standing within their families, their communities, and their country. The complicated interactions among the ways in which men and women may experience trade impacts make it particularly difficult for policymakers to develop appropriate tools, policies, and programs to ensure that the benefits of trade are distributed more equally to men and women, as well as to the wealthy and the indigent.

INTERNATIONAL PERSPECTIVE

Trade liberalization is widely perceived to have a positive impact on aggregate economic performance, though benefits do not accrue to countries equally. Whether and to what extent countries can gain from trade liberalization depends on a number of factors such as the supply-side capacity to fulfill the requirements of trading partners and certain norms assigned by the multilateral trade regime. Even if a country's economic performance improves as a result of trade liberalization, the distributive effects of liberalization on various groups of the society may differ. Economic changes brought about by trade liberalization are likely to affect men and women differently, as their economic and social roles vary. Due to the existence of a gendered social structure, trade liberalization may have gender-differentiated effects, though trade liberalization as such may not be a gendered phenomenon. Trade liberalization can create opportunities for producers and workers regardless of gender.[3] It has also been argued that though trade liberalization has expanded access to employment by women, the state's interventions in the economy in terms of controlling physical and financial capital flows and setting industrial and agricultural policy are essential for reducing gender inequality (Seguino and Grown, 2006). Women have benefited from the efficiency gains from trade liberalization as workers and consumers, and evidence shows that women may be less vulnerable than men to some of the adjustment costs associated with trade liberalization (Nordås, 2003).[4]

One positive effect of trade liberalization is the increased number of jobs available in the economy for women. General trade theory suggests that in opening up trade, labor-abundant countries will experience job creation in their export-oriented industries, and over time, the relative wages of unskilled labor will rise (Nordås, 2003). Some argue that globalization would lead to the feminization of labor. Higher value-added jobs may be

[3] In the literature, a positive relationship between trade expansion and women's participation in the workforce is observed (Joekes, 1995, 1999; Ozler, 2000; Elson and Pearson, 1981; Standing, 1989).
[4] This conclusion is based on case studies in Mauritius, Mexico, Peru, the Philippines, and Sri Lanka, analyzing trade effects on job opportunities and earnings of women.

created due to increased trade, providing an opportunity for women to access higher income jobs and improve their social status. The gender wage gap could be reduced through higher wage jobs provided by increased trade and investment. It has also been suggested that many labor-intensive industries are dominated by women and, consequently, job creation, as a result of industrialization, will largely benefit women (Rodgers, 1996; ILO, 2002; Cunningham, 2001). The positive gender effect is found to be largest in low-income countries and among unskilled female workers (Fontana and Wood, 2000; Wood, 1991).[5]

On the other hand, trade liberalization may also affect women's employment negatively.[6] Under some circumstances, researchers have documented a distinct positive effect on male employment and a negative effect on female employment as a result of trade expansion (Fofana et al., 2005; Schumacher, 1984).[7] Liberalization can also affect women disproportionately in terms of a decrease in the quantity and quality of jobs due to increased competition. Women may be disproportionately displaced from work due to international trade depending on which sectors contract or expand as a result of increased foreign investment (Baldwin, 1984). To minimize costs in a competitive market, employers may pressure women workers to accept reduced wages. Fleck (2001) finds that female/male wage ratios in Mexico vary greatly between industries. The gender wage gap is wider the higher the concentration of women in an industry and the greater its capital intensity. The increase in market activities by women, which generate revenue as a result of increased opportunity through trade, can have perverse effects on female leisure and domestic work, as women must work additional hours to carry out their domestic responsibilities once they complete their waged work. Fontana and Wood (2000) show that a 60 percent decline in garment exports in Bangladesh would lead to an increase in time spent on households more than leisure time.

The empirical evidence documenting the relation between trade liberalization and gender in developing countries is inconclusive on a sector level; though, it appears that female participation in the labor force increases with increases in income and that the wage gap narrows in the process.[8] However, the reason for a decline in the gender wage gap cannot be directly linked to trade liberalization as no conclusive evidence can be found. Rather, the flexibility of the labor market, the structure of gender relations, and the general position of women in society appear to be more relevant than trade liberalization itself. The impact of trade liberalization on women is influenced by certain economic roles played by women. For example, for most women, their reproductive role

[5] In analyzing data for 1960–85, Wood (1991) found that trade between developed and developing countries led to an increased share of female employment in developing countries.
[6] Kucera and Milberg (2000) found that trade with developing countries has had a negative impact on female employment in 22 Organization for Economic Co-operation and Development (OECD) countries. Using data for 1978–95, they conclude that women's job loss in the OECD countries has been mainly in the textiles, apparels, and leather industries.
[7] Fofana and others (2005) evaluated impacts of tariff elimination on the wellbeing of men and women in South Africa and found strong gender bias against women, with a decrease in their labor market participation and an increase in men's participation in the market economy. Schumacher (1984) used 1977 data of exports and imports among six European Union countries and developing countries to arrive at this conclusion.
[8] As the industrial structure changes toward higher value-added industries, employment becomes less gender biased and, thus, women's relative income improves (Nordås, 2003).

takes precedence, which may limit the amount of time for productive activities outside the household. As a result, women spend less time on market activities, though women r spend more total hours working when in the total time spent on for market and non-market activities is calculated(UNDP, 2002).[9]

Studies in countries with a great deal of unskilled labor such as Bangladesh, Turkey, and Tunisia support the hypothesis that trade liberalization benefits unskilled female workers (Fontana and Wood, 2000; Ozler, 2000; Haouas et al., 2003).[10] One positive contribution of trade liberalization in Bangladesh has been the creation of employment opportunities for a large number of young women in the RMG industries. These are women who would otherwise be unemployed and working without pay to carry out their household responsibilities. Wage employment (such as in the RMG sector) has provided young women with economic freedom, greater autonomy and improved their self-esteem (Amin et al., 1998; Kabeer, 2000, 1997).[11]

BANGLADESH PERSPECTIVE: STUDIES ON THE RMG SECTOR

The economic and social dimensions of the RMG sector have been explored in several studies (CPD, 2003; Paul-Majumder, 2003; 2002; 1996; Paul-Majumder and Begum, 1997; Paul-Majumder and Zohir, 1995, 1994; Paul-Majumder and Begum, 2006; Paul-Majumder and Begum 2000; Bhattacharya et al 2002; Bhattacharya and Rahman, 1999; Kabeer and Mahmud, 2004; Kibria, 1996; Khan, 2001; Zohir and Paul-Majumder, 2002, 1996; Zohir, 2001; Afsar, 1998). All of these studies address the socioeconomic conditions for workers, wages, working hours, work environment, social security, and the social status of garment workers. The studies found that the export-oriented RMG sector has provided unprecedented wage employment opportunities for the young women of Bangladesh. However, gender differences in earning exist for every job category and have widened over time. For example, Paul-Majumder and Begum (2000) reveal that only 6 percent of males in comparison with 32 percent of females are receiving wages below the legal minimum. The gap intensifies with higher skilled jobs. Males are promoted more often than females, and men's earnings increase at a much higher rate than women—even after controlling for age, education, experience, and skill level (Zohir and Paul-Majumder, 1996). One drawback of the industry is that female labor is concentrated mainly in the low-skill, low-wage segment of production. These studies suggest that restructuring of the industry and its domestic apparel sector by introducing new technology will further facilitate growth of the RMG sector. Female industrial employment in the country can be increased through training and skill development. Studies on the impact of MFA phaseout are few and far between, partially because little time has elapsed since the completion of the phaseout on January 1, 2005. A few studies have concluded that Bangladesh would suffer massive job losses

[9] Market activities are economic activities that generate revenue. Examples of non-market activities include household maintenance (such as cleaning, laundry, meal preparation, and cleanup); management and shopping for the household; care for the children, sick, elderly, and disabled in the household; and community services.
[10] Ozler (2000) investigated the relationship between export orientation and female share of employment in the Turkish manufacturing sector, using plant-level data during 1983–85. Haouas, Yagoubi, and Hashmati (2003) found that due to women's increased participation in the labor force, employment increased during liberalization and changes in real wages caused changes in employment.
[11] Similar findings are revealed in other country case studies (Sainsbury, 1997; Lim, 2000; Beneria and Rodlan, 1987; Tiano and Fialo, 1991).

and depletion of foreign exchange earnings as a result of MFA phaseout and enhanced competition in the international market (Raihan et al., 2006; Razzaque, 2005; Khondker et al., 2005; Mlachila and Yang, 2004; Nordas, 2004; Lips et al., 2003; Cookson, 2003; Spinanger and Verma, 2003; Spinanger and Wogart, 2001, Bhattacharya 1999).

Raihan et al (2006) found that domestic trade liberalization has contributed significantly to the expansion of the RMG sector in Bangladesh. As a result, the share of the market labor supply of unskilled female labor tends to increase, and the share of the domestic labor supply and leisure of unskilled female members in the household tends to decrease, both in the short and long run. On the other hand, because of MFA phaseout, projections of job contractions within the sector means that the share of the market labor supply of unskilled female members of the household decreases, and the share of domestic work and leisure of unskilled female members in the household increases, both in the short and long run. In the short run, it is projected that the share of the market labor supply of unskilled female members will decline by 0.77 percent for rural households and 3.45 percent for urban households. In the long run, the maximum decrease is 0.92 percent for rural households and 5.93 percent for urban households.

Razzaque (2005) estimated that duty free access to the United States (U.S.) market could increase Bangladesh's exports by about US$530 million, generating employment opportunities for 180,000 people, of which 144,000 would be female. This study used a partial equilibrium model and highly disaggregated data.

Khondker et al. (2005) developed two alternative scenarios in connection with the MFA phaseout. The first scenario assumed a decline in garment exports in the post-MFA period (1.6 percent of total employment), causing the loss of about 0.74 million jobs. The female workers would lose about 0.2 million jobs due to a drop in export demand. The second scenario assumed an increase in employment by about 0.26 million (0.6 percent).Mlachila and Yang (2004) predicted that after the removal of quotas, if RMG manufacturers do not prepare themselves actively by consolidating and restructuring their operations to improve labor, environmental, and quality standards, exports from Bangladesh could fall substantially, the balance of payment position could be weakened considerably, and the pressure on production and employment could be severe. These authors estimated an employment loss of 4.5 percent.

Using a simulation exercise, Nordås (2004) estimated the impact of removing the MFA quota on Bangladesh RMG exports to the EU and U.S. This study predicted scenario before (1997) and after (2005) quota elimination in these countries. It shows that while Bangladesh's share in the EU market will increase from 3 percent during "before" quota elimination period to 4 percent during "after" quota elimination period, the share in the U.S. market will decline from the current 4 percent to about 2 percent as a result of MFA phaseout.

The study by Lips and others (2003) also undertook a simulation exercise to estimate the impact of eliminating the MFA quota. According to this study, the elimination of MFA quota leads to a decrease of the export production of wearing apparels from Bangladesh by 20 percent.

Using a computable general equilibrium (CGE) model, Fontana (2003) also estimated the impact of MFA phaseout. If the price of RMGs fall by 9 percent as a result of quota removal and, thus, more competition, the volume of Bangladesh's RMG exports will fall by 29 percent and the value of exports will decline by 35 percent, leading to a 1.6 percent decline in gross domestic product (GDP). The study also found that a decline in RMG prices would reduce female employment in the sector by 13 percent and male employment by 4.2 percent.

On the other hand, Rahman (2004) expressed cautious optimism about the sector after the quota's removal. CPD (2003), Bhattacharya and Rahman (2001), and Bhattacharya and Rahman (1999) have also examined the post-MFA challenges for the apparel sector. The authors predicted that as women are employed in low-skilled jobs, they might be discriminated against, and their employment might not be sustainable if the garments industry upgrades to more advanced technology and production processes in response to greater global competition. Hence, Bangladesh should develop public policies aimed at encouraging skills development to facilitate technology transfer and raise the productivity of female workers. This would help sustain increases in the earning opportunities of the female labor force.

As the above literature review indicates, few studies exist on gender-differentiated consequences of MFA phaseout based on primary data. However, a gender-disaggregated analysis of the impact is extremely important from a policy perspective in view of the disproportionate participation of women in the sector and the structural change expected to occur after phaseout.

This study is unique in that it examines the impact of MFA phaseout at the firm- and worker-levels in a gender-disaggregated manner and on the basis of primary survey and debriefing sessions with all stakeholders. Although the sample size is small, the analysis should provide important insights for policymakers.

IV. GROWTH TRENDS IN THE RMG SECTOR

During the last two and half decades, the export-oriented RMG sector of Bangladesh has made significant contributions to the economic development of Bangladesh.[12] The sector has played a crucial role in earning foreign exchange for the country, improving the balance of payments situation, eradicating poverty for a large section of the population through employment creation, particularly for women. Growth in the sector has also fostered various multiplier linkages in the economy, including forward and backward linkages to economic activities. Evidence shows that the multiplier and linkage effects of the RMG sector are substantial. Based on the Input-Output[13] Table 2000 for Bangladesh, the total backward linkage for the RMG industry is estimated to be 2.1—in other words, a one unit increase in its final demand would lead to an economy-wide output increase of 2.1 units. Sectors that are closely linked with the RMG sector include cloth, yarn, professional services, housing services, bank services, insurance, real estate, storage, machinery, and cotton cultivation (Razzaque, 2005).

AN OVERVIEW OF THE SECTOR

Gross foreign exchange earnings from RMG exports and their share of the total export earnings have increased significantly over time. The sector's earnings increased from US$3.36 million in FY1981 (0.47 percent of total export earnings) to US$7.9 billion in FY2006 (75 percent of total export earnings) (see Table 2). RMG exports account for 25 percent of gross value addition in the manufacturing sector of the country. The share of RMG exports in total GDP stood at 13.1 percent in FY2006 compared with 0.16 percent in FY1984 (see Figure 1).

Table 2. Growth of RMG Exports of Bangladesh (FY1980–2006)

Financial Year	Average Yearly Export of RMGs (US$ million)	Average Yearly Exports of Bangladesh (US$ million)	RMG Share in Total Export Earnings (%)
1980–84	10.68	716.6	1.5
1985–89	290.3	1070.6	27.1
1990–94	1134.9	2030.4	55.9
1995–99	3115.7	4449.5	70.0
2000–04	4878.4	6471.4	75.4
2005	6428.1	8435.0	76.2
2006	7902.3	10514.0	75.2
2007(July–Sept)	2514.6	3249.3	77.4

Source: CPD Trade Database—compiled from various sources such as the Bangladesh Bank, Export Promotion Bureau, and Economic Relations Division of the Ministry of Finance, Government of Bangladesh.

[12] About 95 and 90 percent of woven and knit production, respectively, are directed toward external markets.
[13] The Input-Output system is used to identify activities with high linkages in order to prioritize sectors. The Input-Output Table 2000 was constructed under the Sustainable Human Development Project of the Planning Commission of Bangladesh.

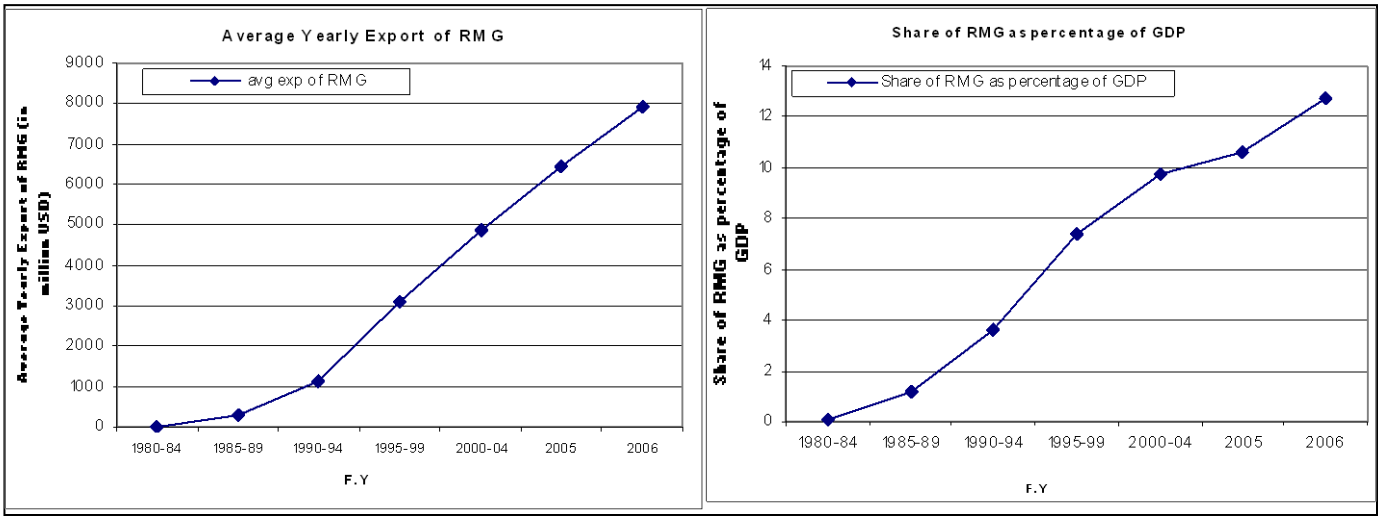

Figure 1. Growth of RMG and its Share in GDP
Source: CPD Trade Database.

The number of RMG factories has increased from about 600 in the mid-1980s to 3,560 in 2005-06. (BGMEA website accessed in December 2006). In 2004–05, there were 4,300 member firms of BGMEA, of which 2,275 were woven factories, 700 were knit factories, and 525 were sweater factories (by various accounts about 1,300 of these factories are not in operation during 2005-06.). Another 560 factories were exclusive members of the Bangladesh Knitwear Exporters and Manufacturers Association (BKMEA). The total number of active factories is about 3,560, of which 1,673 (47percent) are woven factories, 1,495 (42percent) are knit factories, and 392 (11percent) are sweater factories.

The export-oriented RMG sector of Bangladesh is a major source of employment and income for about 2 million people, of whom 80 percent are women. Employment in the sector has increased dramatically from 0.1 million workers in the mid-1980s and currently absorbs about one-third of the industrial workforce. The growth rate of employment in the sector during 1980–2004 was estimated to be 24 percent per annum (Khondker, Razzaque, and Ahmed, 2005). Accordingly, during the previous two decades, the RMG sector has become the main source of export growth and employment.

Although, for obvious reasons, Bangladesh was apprehensive regarding the impact and implications of MFA phaseout and the quota restriction as of January 1, 2005, the sector posted a growth of 31 percent in 2005 compared with the average export of 2000–04 and 23 percent in 2006 compared with 2005 (EPB, 2006). During the first quarter (July–September 2006), the growth rate was estimated at 33 percent.

Woven products accounted for 100 percent of total RMG exports in the 1980s when Bangladesh started to make inroads into the U.S. market thanks to quota-based market access. However, since the early 1990s, knitwear products have accounted for 33 percent of the market prior to the abolition of the quota in December 2004 (see Table 3). In 2006, the share further increased to about 48 percent. During the first three months of FY2007 (July-September 2006), the value of knit and woven exports increased by 35.5 and 13.5 percent, respectively (EPB 2006). Most of the increase in exports in recent years, however, was accounted for by the increase in volume. In FY2007, for the first time in Bangladesh's history, RMG knit exports will likely exceed RMG woven exports. In terms of employment, male workers dominate the knitwear industry and female workers dominate the woven garment industry, as women are less skilled in

running the machines used for knitwear. Because of its heavy dependence on imported inputs, the local value addition of woven RMGs is only 40–45 percent compared with 70 percent in the knitwear sector. In view of the expansion of knitwear, female workers should be trained to sustain their employment in the sector.

Table 3. Rising Share of Knit—RMG

Financial Year	Average Export (US$ million)		Share (%) in total RMG Exports	
	Knit	***Woven***	***Knit***	***Woven***
1980–84	insignificant	10.7	0.2	99.8
1985–89	0.0	290.3	0	100
1990–94	146.7	988.2	12.9	87.1
1995–99	745.5	2370.2	23.9	76.1
2000–04	1604.7	3273.6	32.9	67.1
2005	2823.0	3605.1	43.9	56.1
2006	3816.2	4086.1	48.3	51.7
2007(July–Sept)	1248.9	1265.7	49.7	50.3

Source: CPD Trade Database.

PRODUCT AND MARKET CONCENTRATION

Bangladesh has been able to diversify its apparel products from T-shirts, trousers, ordinary shirts, shorts, caps, women's and children's wear to shirts of complicated designs and jackets, sweaters, and denim (see Table 4). Some brand items are also being exported, leading to higher export earnings from these items and enhanced local value addition. However, about five apparel products still account for more than 80 percent of total RMG exports. These export items are mass-scale products, and with lower local value addition, they are less fashionable and sold at a low price in retail markets where they face strong competition. Intra-RMG diversification, with capacity to enter into higher value, relatively higher-end segments of the demand curve is a challenge that Bangladesh will have to address in the near future.

Table 4. Main Apparel Items Exported from Bangladesh (US$ million)

Year	Shirts	Trousers	Jackets	T-Shirt	Sweater	Others	Total Export Earnings from RMG
1993–94	805.3	80.6	126.9	225.9	….	317.1	1555.8
1994–95	791.2	101.2	146.8	232.2	….	956.9	2228.4
1995–96	807.7	112.0	171.7	366.4	70.4	1019	2547.1
1996–97	759.6	231.0	309.2	391.2	196.6	1113.7	3001.3
1997–98	961.1	333.3	467.2	388.5	296.3	1334.6	3781.0
1998–99	1043.1	394.9	393.4	471.9	271.7	1445	4020.0
1999–2000	1021.2	484.1	439.8	563.6	325.1	1324	4157.6
2000–01	1073.6	656.3	573.7	597.4	476.9	1481.9	4859.8
2001–02	871.2	636.6	412.3	546.3	517.8	1599.5	4583.8
2002–03	1019.9	643.7	464.5	642.6	578.4	1563.1	4912.1
2003–04	1116.6	1334.9	364.8	1062.1	616.3	1191.5	5686.1
2004–05	1053.3	1667.7	430.3	1349.7	893.1	1023.9	6418.1
2005–06	1056.7	2165.3	389.5	1781.5	1044.0	1462.8	7900.8

Source: BGMEA website accessed in December 2006.

The quota regime under the MFA was initially a crucial factor in the emergence of the export-oriented RMG sector in Bangladesh and its subsequent momentum. Exports from Bangladesh come under the GSP, meaning apparel items get duty-free access to several developed country markets. Under the Everything But Arms (EBA) facility offered by the EU, Bangladeshi products do not face any quantitative restrictions or tariff barriers if products comply with the Rules of Origin (ROO). The EU and the U.S. are major export destinations of Bangladeshi apparel, with a share of more than 92 percent. Woven garments are primarily exported to North American markets, while knitwear garments are exported primarily to EU markets. The EU receives the largest share of total RMG exports, accounting for more than 60 percent. The share has, however, declined from about 65 percent in 2003–04 to 61 percent in 2004–05 (see Tables 5 and 6). The current market share of Bangladesh's RMG sector is about 3.7 percent in the EU—the major markets being Germany, France, and the United Kingdom.

Table 5. RMG Export to the EU and the U.S. Markets (US$ million)

Financial Year	EU (25)			U.S.			Total Export of RMG
	Knit	*Woven*	*RMG*	*Knit*	*Woven*	*RMG*	
FY2003	1214.1	1563.9	2777.9	350.6	1517.0	1867.6	4912.1
FY2004	1783.9	1874.8	3658.7	236.8	1391.8	1628.6	5685.7
FY2005	2238.1	1707.6	3945.7	402.7	1623.4	2026.1	6428.1
FY2006	2910.5	1797.0	4707.5	618.5	2012.8	2631.3	7902.3

Source: CPD Trade Database.

Table 6. Apparel Export to Major Markets

Destinations	Value (US$ million)				Share (%)			
	FY03	*FY04*	*FY05*	*FY06*	*FY03*	*FY04*	*FY05*	*FY06*
EU (25)	2777.9	3658.7	3945.7	4707.5	56.6	64.4	61.4	59.6
U.S.	1867.6	1628.6	2026.1	2631.3	38.0	28.6	31.6	33.3
Canada	144.6	256.4	307.9	368.2	2.9	4.5	4.8	4.7
Japan	15.3	19.8	16.3	17.9	0.3	0.3	0.3	0.2
Australia	2.8	3.7	7.3	8.6	0.1	0.1	0.1	0.1
India	3.9	2.8	0.8	1.1	0.2	0.1	0.0	0.0
Others	100.1	116.0	113.6	166.3	2.0	2.0	1.8	2.1
Total	**4912.1**	**5686.1**	**6417.7**	**7900.8**	**100.0**	**100.0**	**100.0**	**100.0**

Source: CPD Trade Database.

In the U.S. market, secured access under the quota regime helped Bangladesh to gain a strong foothold over the years, although, subsequently, Bangladesh has also made inroads into the non-quota segment of the market. Prior to the quota phaseout, the share of the quota and non-quota market was 70:30 in the U.S. Exports increased to US$2631.3 million in 2006 from US$1867.6 million in 2003. However, the share of apparel exports to the U.S. is falling. As there is no duty-free access for RMG exports in the U.S., 47 percent of Bangladesh's RMG exports are subject to ad valorem duties of 15–20 percent; the remaining exports face duties between 5 and10 percent

Once safeguard quotas were imposed on the Chinese export of apparels, Bangladesh started to regain its market. Following the quota phaseout, Bangladesh was able to retain and expand its exports to the U.S. market. Exports rose from US$628.6 million in FY2004 to US$2631.3 million in FY2006. In the first three months of FY07, this trend has been maintained.

PRICE COMPETITIVENESS

Unit prices of products under various categories have been on the decline, largely as a result of the accession of China into the WTO and granting of Most Favored Nation (MFN) status to China by the U.S. The rate of decline in the unit price of woven garments is somewhat higher compared with that of knit garments. The cutting-and-making (CM) charge for a trouser or a shirt in the U.S. market was $20–30 in 2004, which has declined to $8.5–12 during 2005-06. This trend in the price is continuing (discussion with members of BGMEA). The decline in the unit value of products has created pressure on entrepreneurs to adjust their operating costs and profit to remain competitive in the global market. This is increasingly characterized by a race to the bottom. However, entrepreneurs that are capable of supplying a large volume of orders have adjusted their unit prices, reaping economies of scale. The declining trend is also observed for other countries such as Cambodia, India, Pakistan, and Sri Lanka, largely as a consequence of China's low prices. The rate of decline of Chinese unit price is higher than in Bangladesh, though the productivity of Chinese garment factories is higher.[14]

Table 7. Unit Value for Exports to the U.S. of Bangladesh's Top 5 Export Categories (US$)

Items	2003	2004	2005	% Change (2003-05)
620520—Men's or boys' shirts, not knit, of cotton	1.6	1.7	0.9	-43.3
620462—Women's or girls' trousers etc not knit, cotton	1.8	1.8	1.0	-41.9
611020—Sweaters, pullovers etc, knit etc, cotton	1.5	1.6	0.6	-62.0
620630—W/g blouses shirts & amp; shirt blouses cotton, not knit	1.9	1.9	0.7	-62.4
620342—Men's or boys' trousers etc, not knit, cotton	1.6	1.5	1.0	-37.7

Source: OTEXA website.

COMPLIANCE ISSUES

As a result of the quota removal, retailers and buyers are free to place orders for any products and for any amount. Several big retailers dominate 65 percent of the retail market, thereby increasing pressure on the exporting country to require that they be compliant in areas related to workers' health and safety, the factory environment, the minimum wage, worker's rights, the owner-worker relationship, sanitary and phyto-sanitary (SPS) measures, and corporate social responsibility (CSR). Several nongovernmental organizations (NGOs) are involved in monitoring compliance, particularly social compliance in the garment factories. The buyers also send their own auditors to monitor compliance. Adhering to requirements obviously has important implications for the cost structures of entrepreneurs. A growing presence of buyers in

[14] The annual value addition in a Chinese garment factory is about three times higher than in Bangladesh (Bangladesh Enterprise Institute-World Bank, 2003).

Bangladesh has been visible in recent years. A failure to ensure compliance will discourage buyers to do business with Bangladesh. It is encouraging that many entrepreneurs are assuming the task of ensuring compliance. Major buyers are also maintaining their relationships with sourcing factories that are compliant. However, buyers are under pressure from their customers, and Bangladesh will need to accomplish the related tasks expeditiously. For obvious reasons, subcontracting firms are finding it difficult to ensure compliance because of their weak capacity to cover the associated additional costs.[15]

CHINA FACTOR

As Rahman and Anwar (2005) show, Bangladesh has exploited the opportunities created by quotas imposed on China's apparel exports to the EU and U.S.[16] Once the restrictions on China are lifted in 2008, China will regain its lost ground and the market share of China will likely increase. To retain its market share, Bangladesh has to improve its production capacity by expanding the size of firms, upgrading production quality by using sophisticated machineries, diversifying products by introducing more high-value products, improving the skills and productivity of workers, reducing lead time by developing backward linkages to textile production, and facilitating domestic and foreign investment by establishing a central-bonded warehouse (CBW) facility for selected fabric categories. The reason for large-scale production is that big buyers prefer to order a large quantity from one manufacturer to save time and simplify the process. China has the advantage as its scale of production is large.

THE ISSUE OF MINIMUM WAGE

In May 2006, Bangladesh's export-oriented RMG sector was beset with large-scale workers' unrest. Workers demanded a revision of the wage structure and an improvement in the working environment. After protracted negotiations, the minimum wage across various categories was revised, and other demands regarding improvements in the working environment were accepted, including the issuing of appointment letters and identity cards, maternity leave for three months with full salary, payment of wages and overtime by the first week of each month, a one-day weekly holiday, medical leave, and the right to establish trade unions. The revised wage structure, in terms of the change in dollars, is not positive in the case of most grades. As shown in Table 8, an increase in nominal wages is observed only for the lowest grade, grade VII, and only by 2.9 percent (when wages are converted into US$). For the other six grades, the change in dollars is negative.

Table 8. Wage Structure of RMG Workers

Grades of Workers	Previous Wage (in Taka)	New Wage (in Taka)	Change in Percent	Previous Wage (in US$)	New Wage (in US$)	Change in Percent
VII	930	1662.5	78.8	23.3	23.9	2.9
VI	1320	1851	40.2	33.0	26.7	-19.2

[15] Subcontractors compete mainly on price and do not have any margins to invest in ensuring compliance. They also do not benefit from repeated engagement with buyers demanding compliance.

[16] The cap on growth of exports in 10 categories of Chinese products has positively contributed to the growth of certain knitwear products manufactured in Bangladesh, such as T-shirts, pullovers, blouses, and jerseys. Bangladesh is a major exporter of these items to the EU.

V	1450	2046	41.1	36.3	29.5	-18.7
IV	1710	2250	31.6	42.8	32.4	-24.2
III	2100	2449	16.6	52.5	35.3	-32.8
II	3400	3840	12.9	85.0	55.3	-34.9
I	4700	5140	9.4	117.5	74.0	-37.0

Note: The exchange rate used as follows: in FY1994 US$1 = Taka 40.00; on October 6, 2006 US$1 = 69.46
Source: BGMEA website accessed in December 2006.

Despite the limited change, the new wage structure is likely to put entrepreneurs under renewed pressure at a time when profits are already falling. However, it will help with compliance concerns among buyers. The revised wage structure will further reinforce the need for initiatives to raise capital and labor productivity. Some entrepreneurs, particularly the smaller RMG units, believe that increasing wages could reduce employment, leading to significant lay-offs for female workers as they are less skilled compared to male workers. To develop a modern, dynamic, and competitive RMG sector, instituting an appropriate compensation package for workers and creating a conducive working environment for raising productivity are important prerequisites. However, a revised wage structure—coupled with the high cost of doing business in Bangladesh due to weak governance, the low capacity of institutions, and the low quality of transport, communication, and trade facilitation—is likely to lead to future cost escalation in the RMG sector.

This escalation will need to be offset by productivity-enhancing measures at the firm level. If these measures do not lead to worker redundancy, Bangladesh will be required to substantially enhance its exports. Currently, high export growth (about 33 percent in the first quarter of FY07) has enabled the Bangladesh RMG sector to continue performing without retrenching workers, mainly because this export surge has been driven by increases in volume. Once the cost of production and competition pressures increase further, particularly once restrictions on Chinese exports are lifted in 2008, it is likely that entrepreneurs will be forced to undertake more labor-displacing measures. This situation has important implications for workers, particularly women workers in the RMG sector.

V. CHARACTERISTICS OF SAMPLE ENTERPRISES AND WORKERS

FACTORIES BY LOCATION, TYPE, AND SIZE

The survey was conducted in 17 large (41.5 percent), 10 medium (24.4 percent), and 14 (34.1 percent) small factories. The size of the factory is defined by the number of workers. Large factories employ more than 1,000 workers, medium factories employ 500–1,000 workers, and small factories employ less than 500 workers. Among 17 large factories, 5 are located in EPZs and 12 are located in non-EPZs. Among medium-sized factories, 1 is in an EPZ and 9 are in non–EPZs. Among small factories, 3 are in EPZs and 11 are in non-EPZs (see Table 9 for the factory locations). In total, among the 41 factories surveyed, 22 percent manufacture knitwear, 63.4 percent manufacture woven wear, and 14.6 percent manufacture sweaters (see Table10 for the breakdown by factory size and zone).

Table 9. Factories Surveyed by Location (Total and %)

Location	Total	% of Total
Dhaka City	18	43.9
Outer Dhaka City	13	31.7
Dhaka EPZ	3	7.3
Chittagong	1	2.4
Chittagong EPZ	6	14.6
Total	**41**	**100**

Note: Dhaka City includes Greater Mirpur, Rampura, Moghbazar, Malibagh, Uttara, Banani, Cantonment, Gulshan, Badda, Mohakhali, Motijheel, Kakrail, Paltan, Tejgaon, and Jatrabari. Outer Dhaka includes Savar, Dhamri, Tongi, Gazipur, Sripur, Ashulia, and Narayanganj.
Source: CPD/GATE Survey, 2006.

Table 10. Size of Factories Surveyed by Type (%)

Size of Factories	% of Total Factories		
	Knit	***Woven***	***Sweater***
EPZ			
- Large	20.0	80.0	
- Medium	-	100.0	
- Small	33.3	33.3	33.3
Non-EPZ			
- Large	8.3	66.7	25.0
- Medium	33.3	44.4	22.2
- Small	27.3	72.7	
Total EPZ + Non EPZ			
- Large	11.8	70.6	17.6
- Medium	30.0	50.0	20.0
- Small	28.6	64.3	7.1
Grand Total	**22.2**	**63.4**	**14.6**

Note: Size of factories is defined by the number of workers:
Large = > 1000 workers; Medium = 500–1000 workers; Small = <500 workers
Source: CPD/GATE Survey, 2006.

AGE DISTRIBUTION OF WORKERS BY GENDER

The age of garment workers is particularly important from the point of view of type and duration of work. In Bangladesh's RMG sector, workers are employed for long hours with few holidays; the work is tedious and monotonous and requires energy and patience. Because of occupational hazards and physical stress, workers cannot work more than a few years in the sector. Female garment workers are employed in the RMG sector for an average of four years (Paul-Majumder, 1996); many also discontinue work after marriage. Male workers in the knitwear sector cannot work for more than 10 years, as the work needs physical strength and puts pressure on their eyes (CPD/GATE Survey, 2006). Studies have indicated that workers in the garment factories, particularly women, are generally young (Zohir and Paul Majumder, 1996), and this current study corroborates this finding. More than half (50.9 percent) of all female workers surveyed are between the ages of 20 and 25. Approximately 40 percent of male workers are between the ages of 26 and 30 (see Table 11). Thus, female workers are found to be younger than male workers. About 33 percent of female workers are between the ages of 25 and 30. As workers grow older, their participation in the garment factories declines. The debriefing of workers revealed that the rate of decline is faster for female workers, as they are unable to do tedious jobs and have an increasing responsibility to the family. A portion of these retired female workers find jobs as housemaids.

Table 11. Age Distribution of Surveyed Workers (%)

Age Group	Male		Female		Total	
	Number	***%***	***Number***	***%***	***Number***	***%***
>20	2	6.3	5	9.1	7	8.0
20–25	12	37.5	28	50.9	40	46.0
26–30	13	40.6	18	32.7	31	35.6
31–35	4	12.5	2	3.6	6	6.9
36–40	1	3.1	2	3.6	3	3.4
>40	-	-	-	-	-	-
Total Sample	**32**	**100**	**55**	**100**	**87**	**100**

Source: CPD/GATE Survey 2006.

In the knitwear and sweater sectors, the highest percentages of surveyed male workers (42.9 and 75 percent, respectively) are between the ages of 26 and 30. In the woven sector, the highest percentage of surveyed male workers (52.9 percent) is between 20 and 25 years old. In aggregate, the share of male and female workers surveyed for the age group 20–25 is highest among knit and woven factories. The share of workers in sweater factories is 46.7 percent in both age groups of 20–25 years and 26–30 years (see Annex Table 1). Interestingly, in the surveyed factories, no worker is older than 40 years old, and only 3.4 percent of workers are 36–40 years old and 6.9 percent are 31–35 years old. About 8 percent of all workers are younger than 20 years old. Females constitute the higher share of these younger workers (9.1 percent of all female workers) compared with the males (6.3 percent of all male workers).

The mean age is 25.24 years for female workers and 26.69 years for male workers. Surveys conducted by the Bangladesh Institute of Development Studies (BIDS) in 1990 and 1997 found that the mean age of female workers increased from 19 to 20.4 years (Zohir and Paul-Majumder 1996; Paul-Majumder, 2003) between the two survey

periods. This current study indicates that the mean age of female and male workers has increased by 4.8 and 1.7 years, respectively, over about 8 years. Thus, the age gap between male and female workers declined during this period. A possible reason for the increase in mean age is the enactment of a law during the 1990s against employing laborers under the age of 18. However, younger workers are also engaged in some factories, though infrequently. Ms Rabeya Khatun is a case in point who is only 16 years old but enrolled as 18 years (Box 1).

Box 1. Case study 1: Life begins at an early age

Rabeya Khanam, 16, has been a helper for two years (joined in 2005) in the sewing section of a woven RMG factory. She has neither education nor work experience and earns 1,100 taka per month. She is unmarried. Three members of her family are dependent on her income. She lives in a one-room tin-roofed house with her family, where they have access to sanitary latrines and safe water. Though she is able to manage three meals a day, she has no savings. Her family eats meat or fish twice or three times per week. Her wage is not sufficient for a decent living, and she feels that a minimum of 1,500 taka is required for a decent living.

Rabeya works eight hours per day with three hours overtime on average. She enjoys one holiday per week. She believes that a lack of training, motivation, and incentives keep workers under-utilized in her section and that training on sewing could improve her skill level and help her obtain a more skilled job. She mentioned that minimum age and work experience are general criteria for hiring a worker. Her factory does not pay her salary in the first week of the month; sometimes payment is delayed to the fourth week. She thinks that the frequency of job turnover is not high. Since joining the factory, she has maintained a constant average rate of production of 65 pieces per day.

Rabeya has limited knowledge of the phasing out of the MFA and its possible impact on the apparel sector of Bangladesh. However, she thinks that it will not be difficult for her to get a job after phaseout. She also has limited knowledge about trade union or NGO activities, and she is not involved in any related activities.

When asked about what measures could improve her livelihood and that of other workers, she mentioned medical allowances, the rationing of foods, Vulnerable Group Feeding/Vulnerable Group Development cards, and the upward revision of wages by factory owners.

Source: CPD/GATE Survey, 2006.

MARITAL STATUS

Among all surveyed workers, 67 percent of are married. Of the married male workers, 52.6 percent are between the age of 26 and 30. Of the married female workers, 50 percent are between the age of 20 and 25. Table 12 reveals that the rate of early marriage is low with only one female worker (2.4 percent of total married women) under the age of 20. This data reflects the recent social change in Bangladesh, which indicates that women are being increasingly drawn to the labor market.

Table 12. Marital Status of Surveyed Workers by Gender and Age

Age Group in Years	Married				Unmarried				Total			
	Male		*Female*		*Male*		*Female*		*Married*		*Unmarried*	
	No	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*
<20	0	0	1	2.4	2	15.4	4	30.8	1	1.7	6	21.4
20–25	4	21.1	21	50.0	8	61.5	7	53.8	25	42.4	15	53.6
26–30	10	52.6	16	38.1	3	23.7	2	15.4	26	44.1	5	17.9
31–35	4	21.1	2	4.8	-	-	-	-	64	6.8	2	7.1
36–40	1	5.3	2	4.8	-	-	-	-	3	5.1	-	-
Total Married	19	100	42	100	13	100	13	100	59	100	28	100
% of Total	**59.4 of all male workers**		**76.4 of all female workers**		**40.6 of all male workers**		**23.6 of all female workers**		**67.8 of all workers**		**32.2 of all workers**	

Source: CPD/GATE Survey 2006.

The marital status differs among male and female workers in the EPZ and non-EPZ factories and in the knitwear, woven wear, and sweater factories. The share of married women and men among all female and male workers is 76.4 and 59.4 percent, respectively. This CPD/GATE survey shows that the percentage of married female workers has increased since the 1990s (participation was 38 percent in 1990 and 1997) (*op. cit.*)—which can be attributed to a change in employers' attitudes and a willingness of married women to participate in the labor market. Women are pushed to the labor market due to increased cost of living. Participation in the job market has empowered women both in the family and society, and participation would increase further if women had the opportunity to receive training.

The number of married female workers is higher than the number of married male workers in all types of factories. The share of married female workers among all female workers is 66.7, 79.5, and 71.4 percent in knit, woven, and sweater factories, respectively. The share of married male workers is 57.1, 70.6 and 37.5 percent in knit, woven, and sweater factories, respectively (see Annex Table 2). The age distribution of married workers in various types of factories show that none of the male workers are married at the age below 20 years while 2.2 percent of total female workers in woven and 6.7 percent of total female workers in sweater factories are married at the age below 20 years. This reflects that fact that girls are married at an early age compared to men (see Annex Table 3).

Traditionally, entrepreneurs in Bangladesh have preferred to employ unmarried or single women, as married women tend to take frequent leave time for childbirth, child care, and household activities; or they stop working after marriage due to pressure from the husband or in-laws. However, the CPD/GATE study finds that being married is no longer a significant barrier to entering the labor market. The share of unmarried women is 23.6 percent, indicating a change in attitude among both entrepreneurs and workers. In addition, more women are now looking for employment after marriage, which is driven both by economic needs and changing attitudes. The social taboo on women's engagement in the job market has reduced over the years due to better education and increased access to information through media.

EDUCATIONAL QUALIFICATIONS

Interestingly, while the national literacy rate for the population of age 7 and above is 52.8 percent for males and 44.5 percent for females (BBS, 2004), among the garment workers surveyed, 95.4 percent are literate. However, there is a gap in the education level of male and female workers in the RMG sector. The difference reflects the national literacy pattern for men and women in Bangladesh, but is wider when compared with the national figures. No uneducated male workers are found in the survey, while 7.3 percent of female workers are illiterate. The share of male workers with an education beyond the primary level is 84.4 percent, while the share of female workers is only 50.9 percent. The gender gap increases with each level of education; 15.6 percent of male workers have an education at the higher secondary certificate (HSC) level, in comparison with only 1.8 percent of female workers (see Table 13). This data reflects the fact that women tend to be concentrated in unskilled jobs that do not require a high level of education. The low number of workers with no education reflects a recent national increase in the enrollment of both boys and girls in primary education—partially due to free primary education programs provided by government and some NGOs. In addition, garment factories tend to prefer workers with a minimum level of education, and poor families are educating their female children in the hope of sending them to work in these factories (Afsar, 1998).

Table 13. Educational Qualifications of Surveyed Workers

Educational Level	Male		Female		Total	
	Number	***%***	***Number***	***%***	***Number***	***%***
No Education	0	0	4	7.3	4	4.6
Primary	5	15.6	23	41.8	28	32.2
Up to Class Ten	9	28.1	20	36.4	29	33.3
SSC	13	40.6	5	9.1	18	20.7
Up to Class Twelve						
HSC	5	15.6	1	1.8	6	6.9
Degree Level						
Bachelor and Above	0	0	1	1.8	1	1.1
Others	0	0	1	1.8	1	1.1

Source: CPD/GATE Survey, 2006.

The level of education varies by job category. Most of the operators (94.9 percent of all operators) have an education beyond the primary level (40.7 percent at the primary level, 30.5 percent up to class ten, 18.6 percent up to a secondary school certificate (SSC), and 3.4 percent up to the HSC level). Among the helpers, 85.7 percent have an education up to the SSC level, and 14.3 percent have no education (see Annex Table 4). A difference in education levels is also observed between EPZ and non-EPZ areas; the literacy rate in the EPZ factories is 100 percent, compared with 90.9 percent in the non-EPZ factories. This difference may be because EPZ factories pay better than non-EPZ factories, thus creating competition for jobs that educated workers have a better chance of obtaining.

DISTRIBUTION OF WORKERS BY JOB CATEGORY

The CPD/GATE survey interviewed 59 operators; 7 helpers; 3 packers; and 18 other types of workers, including iron workers, folders, cleaners, and storekeepers. Women's

participation is most prevalent in the operator and helper categories. Table 14 shows the percentage of male and female workers by category and location.

Table 14. Job Category of Surveyed Workers (% of Total Workers)

Job	EPZ		Non-EPZ		EPZ+Non-EPZ	
	Male	***Female***	***Male***	***Female***	***Male***	***Female***
Operator	70.0	54.5	54.5	77.3	59.4	72.7
Helper	20.0	27.3	-	4.5	6.3	9.1
Packer	-	-	-	6.8	-	5.5
Others	10.0	18.2	45.5	11.4	34.3	12.7
Total	100	100	100	100	100	100

Source: CPD/GATE Survey, 2006.

VI. ENTERPRISE-LEVEL ANALYSIS

EXPORTS AND ORDERS

A comparison of total exports per surveyed factory during pre- and post-MFA phaseout shows that exports increased for all types of factories from 2004 to 2005 (see Table 15). On average, during this period, the increase was highest for sweater factories (35.8 percent followed by woven factories (14.1 percent) and knitwear factories (8.4 percent). Note that the national growth of exports was 1.7, 25.8, and 44.9 percent for woven, knit, and sweater factories, respectively, during FY2004/05 (EPB, 2006).

Table 15. Total Value of Exports per Surveyed Factory

Year	Exports/Factory (US$ million)				Total National Export (US$ million)[1]			
	Knit	***Woven***	***Sweater***	***All***	***Knit***	***Woven***	***Sweater***	***All***
2006					*2773.0*	*4083.8*	*1044.0*	*7900.8*
2005	4.6	5.8	2.4	5.1	1926.4	3598.2	893.1	*6417.7*
2004	4.3	5.1	1.7	4.4	1531.7	3538.1	616.3	*5686.1*
% of Increase (2005/2004)	***8.4***	***14.1***	***35.8***	***14.3***	***25.8***	***1.7***	***44.9***	***12.9***
% of Increase (2006/2005)					**44.0**	**13.5**	**16.9**	**23.1**
	Export/Worker (in US$)							
				Knit	*Woven*	*Sweater*	*All*	
2005				6805	5497	3073	5429	
2004				6669	4875	2334	4898	
% of Increase				**2.0**	**12.8**	**3.2**	**10.8**	

[1] Denotes FY data.
Source: CPD/GATE Survey, analysis based on BGMEA, 2006.

The value of exports per surveyed factory varies according to the type, size, and location of the factory. National estimates [or all knit, woven, and sweater factories also reveal the same finding; the total value of national woven exports was highest at US$3538.07 million, when compared with US$1926.35 million for knitwear exports and US$893.12 million for sweater exports. In 2005, for the surveyed factories, the value of woven exports was US$5.84 million, compared with US$4.63 million and US$2.35 million for knitwear and sweater exports, respectively.

The survey results show that the value of exports per worker nationally was US$5429 in 2005, compared with US$4898 in 2004 (showing an increase of 10.84 percent). The value of exports per worker is highest for knit factories, followed by the woven and sweater factories (see Table 15).

Export destination has changed little during the pre- and post-MFA period. In 2005, of the total exports, each factory (on average) exported 64.8 percent to the EU, 27.8 percent to the U.S., and 6.3 percent to Canada—compared with 69.2, 25.8, and 5.2 percent to the EU, the U.S., and Canada, respectively, in 2004. National statistics (see Table 6 on page 20) show that the share of total exports to the EU dropped from 64.4

percent in 2004 to 61.5 percent in 2005 (EPB, 2006; BGMEA website accessed in December 2006). However, the share of] exports to the U.S. increased from 28.6 percent in 2004 to 31.6 percent in 2005. For the factories surveyed a similar trend in export destination is evident (see Table 16).

Table 16. Export to Different Countries and Regions Per Surveyed Factory (% of Total Exports)

	US	EU	Other European Countries	Canada	Japan	Others	Total
2005	27.8	64.8	0.6	6.3	0.1	0.5	100
2004	24.8	69.2	0.2	5.2	0.1	0.5	100
2001–03	18.9	77.2	0.0	3.9	0.0	0.0	100
1996–2000	33.3	56.4	0.0	10.3	0.0	0.0	100
1991–95	21.3	70.4	0.0	5.0	0.8	2.5	100

Source: CPD/GATE Survey 2006.

SUBCONTRACTING AND ITS IMPACT

Subcontracting is a common practice in the RMG sector in Bangladesh and is widespread in many other countries.[17] The subcontracting chain operates in the garment industry at various stages of manufacturing. Large manufacturing units receive orders from large brand names and international retailers through their sourcing offices. Some of these manufacturers subcontract either all or part of the garment production and trade processes to medium-sized factories, which in turn, subcontract out to smaller units and home-based workers.

In terms of production, subcontracting occurs when factories receive orders beyond their actual production capacity. Subcontracting takes place both horizontally and vertically. In horizontal subcontracting, firms subcontract the completion of the entire production process, which includes cutting, sewing, and finishing. In vertical subcontracting, firms out-source only some of their production to subcontracting firms. Many factories do not have the ability to complete the finishing of their goods and, as a result, send them to other firms for this stage of production. Firms with finishing machines usually have more resources and experience. In Bangladesh, the entire production process is usually subcontracted out (Zohir and Paul-Majumder, 1996). The practice allows the primary firm to save costs associated with supervising and managing the production process and labor. However, the primary factory is responsible for the products' quality, while the subcontractor is liable for the products' timely delivery. Larger factories subcontract out the production of low-end goods to maximize the use of highly skilled labor that is required for their high-end products; subcontracting firms can get cheaper labor for manufacturing low-end products, making production more cost-efficient. Thus subcontracting firms also reduces the labour cost of large firms.

In terms of trading, buying houses play a critical role. As the growth in the garment industry gained momentum over the last few decades, hundreds of buying houses sprouted-up all across Bangladesh to act as mediators between the buyers and the

[17] A study of nine countries described various forms of subcontracting in the RMG sector. These countries include Bangladesh, Bulgaria, China, India, Pakistan, Philippines, Sri Lanka, Thailand, and the United Kingdom (www.poptel.org.uk/women).

producers. These buying houses operate in the world market, secure orders, and distribute them among local manufacturers for a small commission from the buyers. Sometimes, transnational corporations (TNCs) contact the buying houses directly to place orders. The buying house oversees the timely completion and shipment of the orders. They usually establish a rapport with a handful of local manufacturers and prefer doing business with them on a long-term basis.

In terms of marketing, the subcontracting chain is limited. Currently, about 200 big and small companies comprise the buyers of Bangladeshi garments, but large brand name companies such as Wall Mart, K-Mart, JCPenney, Gap, Levis, and H&M bring in the bulk of the orders. These large companies all have their own buying houses in Bangladesh. They contact the manufacturers and place orders themselves. They prefer working with larger, more prominent manufacturers and aim to build good, long-term business relationships with them.

In the majority of cases, TNCs identify the suppliers of raw materials and then the producers purchase and obtain the raw materials. This process slows down production considerably because of the extremely long lead-time (up to 90 days) and also increases costs, both due to the longer lead-time and the higher cost of foreign raw materials. It takes 30–45 days to collect raw materials. Producers then prepare a sample product and wait for the buyer's approval before starting the full production process. Some TNCs even provide hands-on training to ensure a high-quality product.

TNCs have a code of conduct and firmly observe the regulations outlined. A monitoring officer on behalf of the TNC regularly visits the factories to ensure that they are complying with the regulations. Working conditions in these factories have improved significantly as a result of visits, inspection, and other initiatives aimed at ensuring compliance. To that extent, the working environment for women workers has improved in these factories. However, the factories often subcontract out their orders to smaller factories, where relatively poor working conditions persist.

There are generally four types of garment manufacturing firms—those that

- only subcontract out—that is, those factories that deal with buyers and buying houses directly and place orders to smaller factories in order to supply the goods on time;
- only subcontract in—that is, those factories that take orders from larger firms and do not have any interaction with buyers;
- both subcontract out and subcontract in; and
- neither subcontract out nor subcontract in—that is, those factories that have the capacity to fulfill the orders from buyers.

The CPD/GATE survey reveals that 14.6 percent of factories only subcontract out, 12.2 percent only subcontract in, 14.6 percent both subcontract out and subcontract in, and 58.5 percent neither subcontract out nor subcontract in. The latter types of factories include factories of all sizes. These factories usually expand operations instead of subcontracting more out. Those factories that only subcontract in are all of medium and small sizes (see Table 17). The amount of apparel subcontracted out per factory has fluctuated over time (see Table 18), although it appears from the survey that in recent

times, subcontracting has declined from a peak during 2001–03. This trend, in general, reflects the current practice of major buyers to ensure compliance with regulations in factories. While cost-cutting pressure from increased competition is inducing factories to informalize and subcontract, there is a parallel pressure from buyers to ensure regulation compliance wherever the sourcing is taking place. In this context, many factories are consolidating and expanding operations, rather than subcontracting them.

Table 17. Type of Subcontracting Firms (% of Total Surveyed Factories)

Size of Factory	Only Subcontract Out	Only Subcontract In	Both Subcontract Out and In	Neither Subcontract Out Nor In	% of Total Sample
Large	17.6	-	11.8	70.6	41.5
Medium	20.0	10.0	10.0	60.0	24.4
Small	7.1	28.6	21.4	42.9	34.1
All	**14.6**	**12.2**	**14.6**	**58.5**	**100**

Source: CPD/GATE Survey, 2006.

Table 18. Subcontracting Out by Year

Per Factory	2005	2004	2001–03	1996–2000	1991–95
Amount of subcontracting out (in US$)	0.1129	0.1202	0.2800	0.2333	0.1250

Source: CPD/GATE Survey, 2006.

The avenues for taking orders have changed over time as well. More factories now directly contact the buyers for orders, and this trend has been observed in both EPZ and non-EPZ factories since 2004, when there was a significant shift from a dependency on buying houses to direct interactions with buyers. The amount of orders taken through subcontracting is increasing among EPZ factories but decreasing among non-EPZ factories. Only a small portion of the goods is ordered through online bidding by non-EPZ factories (see Table 19).

Table 19. Orders Taken through Various Methods (% of Orders)

Year	Buying House	Buyers	Subcontractor	Online Bidding	Total
EPZ					
2005	23.3	64.4	12.2	0.0	100
2004	24.4	63.9	11.7	0.0	100
2001–03	55.0	45.0	0.0	0.0	100
Non-EPZ					
2005	43.2	56.2	0.5	0.1	100
2004	44.7	54.3	0.9	0.1	100
2001–03	75.7	18.6	5.7	0.0	100

Source: CPD/GATE Survey, 2006.

TECHNOLOGICAL CHANGE

It was generally believed that after MFA phaseout, countries with a competitive strength in apparel production, but who previously had been restricted by the quota, would be able to take full advantage of the global market, while those countries that are less competitive, but had taken advantage of the secured market under the quota, would face difficulties in maintaining their current market share. However, in the long run, it is

to be expected that producers such as those in Bangladesh will face greater competitive pressures against firms/suppliers with integrated supply chains, high service standards, and economies of scale—advantages enjoyed by larger producers such as China or India. Accordingly, suppliers such as those in Bangladesh will need to take concrete measures to improve their competitiveness. The CPD/GATE study does indicate that a significant proportion of RMG units have upgraded their operations as a strategic response.

One measure employed to operate in an increasingly competitive global market is technological upgrading—specifically through the introduction of new machinery. This is evident in examining the change in the average total stock of machinery held by RMG factories over the years. Table 20 reveals that, both in EPZ and non-EPZ factories, the average total stock of machineries per factory is higher in 2005 than in 2004. Among EPZ factories, the change is 15.5 percent from 2004 to 2005 and 96.8 percent from 2003 to 2004; while among non-EPZ factories, the change is 9.4 percent from 2004 to 2005 and 44.5 percent from 2003 to 2004. This trend shows that entrepreneurs were preparing themselves for MFA phaseout by procuring more machinery. The change has been greatest among knit factories compared with woven factories, which is in line with the change in the composition of RMG sector outputs, where knit RMG production is expanding at a faster pace in comparison with woven RMG production. This finding also corroborates the hypothesis that, in Bangladesh, the so-called "smart factories" started to upgrade their technology well before MFA phaseout, particularly in view of China's accession to the WTO in 2001.

Table 20. Total Stock of Machineries per Surveyed Factory (US$ million/factory)

Year	Knit	Woven	Sweater	Average Stock Per Factory	% Change in Average Stock/Factory
EPZ					
2005	5.1	1.5	0.1	2.2	15.5
2004	4.6	1.3	0.1	1.9	96.8
2001–03		1.0		1.0	
Non-EPZ					
2005	2.9	3.1	0.4	2.5	9.4
2004	1.9	2.8	0.4	2.2	44.5
2001–03		2.4	0.3	1.6	

Source: CPD/GATE Survey, 2006.

TECHNOLOGY AND FEMALE EMPLOYMENT

While the introduction of new technology is essential for increasing productivity and diversifying products, it is possible that new technology can negatively impact employment and displace labor. However, survey findings reveal that new machinery has not had a significant impact on employment in terms of job loss. Out of 9 knit factories, 8 (90 percent) reported no job loss due to new machinery (see Annex Table 5). Only one small, non-EPZ factory had laid off workers due to improved machinery. Among the woven factories, 18 (69.2 percent) reported having no job loss and 8 (30.7 percent) reported having some job loss. Among the sweater factories, 5 out of 6 factories (83.3 percent) reported no job loss. In aggregate, 31 of factories (75.6 percent) of all types from both EPZ and non-EPZ areas reported no job loss due to new

machinery. The factories cited various reasons for the limited number of lay-offs. While serving to increase productivity, some of the new machines actually required more workers and thus created employment opportunities. As was mentioned previously, in recent years, the robust growth of the RMG export was sustained mainly through volume increases rather than unit price increases. As a result, the introduction of new technology and higher productivity, in the context of higher volumes, did not necessarily lead to labor displacement, so far.

Use of imported machines will enhance the production capacity of newly established or existing garment factories by expanding capacity and create new employment in the garment sector, mostly for female laborers. Most female workers are found in the sewing section in garment factories. For every sewing machine, two female workers are needed: one operator for the machine and one helper to support sewing-related activities. Thus, increasing the importing of machinery should create employment for female laborers. An analysis of the importing of machines (in terms of kilograms) shows that the importing of sewing machines, on average, has increased by 11 percent every year between 2002 and 2006 and importing per factory has doubled within this period.

Note that the production of knitwear requires relatively advanced technology. The CPD/GATE survey reveals that the stock of machinery is highest for knit factories. Over the years, the growth of knitwear factories and exports has been faster than for woven wear (for details see Section IV). The changing composition of production, however, has not yet negatively affected the employment of female workers; one reason for this is that the share of female employment in knit factories has always been lower compared with the share in woven factories. A previous study found that only 35 percent of total workers are female in knit factories, while 68 percent of total workers are female in woven factories (Paul-Majumder, 2003). The same study found that in terms of the labor distribution in various sections, women's participation is highest in the sewing section. However, in the knit factories, only 40 percent women are employed in the sewing and embroidery sections, as opposed to 78 percent in the woven factories—primarily because of a lack of skilled female workers.

The growing share of knitwear in the RMG export basket indicates that, in the future, labor in the apparel sector will be, to a large extent, male-dominated. This will have important implications for future female employment, as the RMG sector has been the primary source of employment for women in recent years. One reason for the ascendancy of knitwear is also Bangladesh's competitive strength in the global market—attributed to strong backward linkages in the sector. In the future, particularly once the safeguard quotas on Chinese exports in the EU and U.S. are phased out, it is likely that knitwear will withstand the competitive pressure more easily than the fabrics import-driven woven sector. If the woven sector's current growth is negatively impacted as a consequence of this, there will likely be negative implications for future female employment. Bangladesh should take necessary measures to re-train and promote the re-hiring of retrenched workers in view of the possible challenge from China. Towards this end skill development programmes for female workers should be undertaken (for details see Section IX). Other important strategies to respond to the situation are to diversify the product basket with high-value products and increase the scale of production. To implement these strategies, more skilled workers are required.

COSTS AND PROFIT MARGINS

The cost structure of the RMG sector has changed during 2004–05. While both industrial and non-industrial costs[18] increased during this time period, the share of labor costs[19] in the total cost declined from 12.3 to 11.9 percent. A rise in unit value of sewing machines (US$ per kilogram) from US$616 in 2002 to US$782 in 2006 indicates that the increase in imports of relatively high-value machines has resulted in an increase in cost (see Annex Table 6). The increase in industrial and non-industrial costs has affected profit margins, reducing profit from 7.0 to 6.2 percent. The limited survey carried out for this study indicates that the profit margin has declined substantially (Table 21) when compared with data from earlier studies (ISS study, 1992; Bhattacharya 1996)—mainly due to an increase in industrial costs and the wage bill of employees. The reason for reduction in profit margin is also due to decline in cutting and making (CM) price offered by buyers during the post MFA period (according to entrepreneurs). The sector is trying to adjust to a reduced profit margin, mostly through increasing production capacity by using new technology and increasing worker productivity. One important finding is that the share of the wage bill in total cost has declined during 2005–06, while the income of workers was reported to have increased by about 13 percent during the same period (for details see Section VII). This may seem counterintuitive, but note that it is only the share, not the actual amount of the wage, being considered. No incidences of job loss have occurred in the factories surveyed despite the upgrade in technology.

Table 21. Distribution of Costs and Profit Margin (% per Surveyed Factory)

Indicators	2004	2005	ISS Study (1992)	BIDS Study (1995)
Industrial Costs	77.0	77.4	73.0	64.0
Non-Industrial Costs	3.7	4.44	3.0	5.0
Wage Bill	12.3	11.9	11.0	7.0
Profit Margin	7.0	6.2	13.0	24.0
Total Output	**100**	**100**	**100**	**100**

Source: CPD/GATE Survey, 2006; ISS, 1993; Bhattacharya, 1996.

MAJOR CHALLENGES AFTER 2008

Removal of the quota on Chinese apparel exports to the EU and U.S. markets could be disadvantageous to Bangladesh, considering that some of the capped exports are also main export items for Bangladesh. Some entrepreneurs are apprehensive that following the removal of the quota on Chinese apparel exports, Bangladesh will face strong competition in the EU and U.S. markets. As the survey interviews indicated, to compete with China, some entrepreneurs in Bangladesh have started to prepare for increased competition by introducing new technology to increase productivity, searching for new export markets, and improving standards and compliance. Many entrepreneurs began to implement these strategies when China acceded to the WTO in 2001. The

[18] Industrial costs include the costs of raw materials, packaging materials, fuel and electricity, spare parts, and subcontracting. Non-industrial costs include the costs of advertisement, facilitation, selling and distribution, bank interest, and taxes.

[19] Labour cost includes basic salary, overtime payment, housing allowance, medical allowance, transport allowance, production bonus and festival bonus.

CPD/GATE survey confirms that 34.1 percent of the entrepreneurs interviewed had already started to prepare in 2004 or even earlier for increased competition from China in 2008. Among the entrepreneurs, 4.9 percent have procured new machinery, 4.9 percent have entered in to new export markets, and 9.8 percent improved their standards and compliance status (see Table 22). Those factories that reported taking no particular measures in view of the MFA phaseout reported acquiring new machinery, seeking new market opportunities, and maintaining standards on a regular and routine basis in order to meet the design and order requirements of the buyers and also to expand their market. It is interesting to note that a large proportion of entrepreneurs are confident about their capacity to address the emerging challenges in the global market. Only 10.9 percent were apprehensive of increasing competition. About 47 percent of factory owners foresee no particular challenge in 2008. Furthermore, they think that the threat is not immediate. According to many respondents, Bangladesh has a comparative advantage in producing certain products, and the country's market presence will be maintained.

However, entrepreneurs do report concerns about hiring skilled labor, which they perceive to be essential for raising productivity. Other factors that they expressed concern about include a growing demand from buyers to meet compliance requirements, accessing raw materials at a faster rate, developing backward and forward linkages, and shortening the lead time.

Table 22. Measures Taken to Face Competition from China (% of Surveyed Factories)

Category	Measures				
	Use of New Machineries	***Search for New Markets***	***Improved Standards and Compliance***	***Others***	***No Measures As Yet***
Knit					
Large	-	-		-	22.2
Medium	-	-		-	33.3
Small	-	-	11.1	-	44.4
Woven					
Large	-	-		3.8	34.6
Medium	3.8	-		3.8	11.5
Small	3.8	3.8		15.4	15.4
Sweater					
Large	-		16.7	-	33.3
Medium	-	16.7	16.7	-	-
Small	-	-	-	-	16.7
Total Factory	4.9 (2)	4.9 (2)	9.8 (4)	14.6 (6)	65.9 (27)

Source: CPD/GATE Survey, 2006.

Our debriefing indicates that as entrepreneurs look for higher and skill-driven productivity, the willingness to recruit male workers may be increasing—as opposed to hiring less skilled female workers. This implies that providing on- and off-the-job training to female workers is becoming important in sustaining current levels of female participation in the RMG workforce.

COMPLIANCE AND WORKERS' SAFETY

In recent years, as a result of pressure from major buyers as well as customers and watchdog bodies, both awareness about and the demand for workers' safety in the workplace have been on the rise. Particularly, major global buyers are increasingly concerned about the enforcement of compliance with regulations. The government of Bangladesh, under international pressure, is taking some steps in this respect. The BGMEA has also undertaken some measures to address this concern. However, Bangladesh's RMG sector will need to do much more in the coming years if the compliance-related demands are to be fully met.

The survey indicates that the working environment differs among EPZ, non-EPZ, and subcontracting factories; though, in terms of some key indicators, many of these factories, irrespective of their category, do not fare well. Evidently, the working environment is better, in general, in the EPZ factories compared to non-EPZ factories, while it is extremely poor in factories which subcontract in (see Table 23). For example, all workers interviewed in EPZ factories reported no accidents due to a poor electricity system since they joined the factory, while 4.6 percent of workers in the non-EPZ factories and 16.7 percent of workers in the subcontracting factories reported such accidents. Emergency exits are lacking in all subcontracting factories, while the lack of exits in the EPZ and non-EPZ factories was found to be low. However, the survey indicates that the situation regarding compliance has improved in recent years, though much remains to be done in this respect.

Table 23. Workers' Safety and Compliance (% Surveyed Workers' Response, Yes)

Indicators	EPZ	Non EPZ	Subcontracting
Safety-Related			
Is the emergency exit stair outside the building?	19.0	40.9	22.2
Does the authority generally lock the emergency exit?	4.5	4.8	100
Does the factory have an emergency alarm?	100	97.0	90.5
Is there a sufficient fire extinguisher on each floor?	100	93.9	94.4
Is the electric system regularly checked?	94.4	90.8	85.7
Have you heard of accidents due to a poor electricity system?	0	4.6	16.7
Health-Related			
Do you have access to pure drinking water on every floor?	83.3	81.0	74.2
Is there a sufficient toilet available on each floor?	94.45	90.9	90.5
Is a first aid box available on each floor?	100	92.3	90.5
Is headphone or musk provided in the noisy or dusty place?	88.9	69.7	66.7
Is there a sick bed available during working hours?	66.7	66.7	63.1
Does the authority provide any qualified doctor/nurse for you?	81.0	65.2	61.1
Does the authority supply medicines for you?	76.2	60.6	55.6
Welfare-Related			
Is there a suggestion/complaint box in your factory?	77.8	76.2	65.2
Does the authority provide lunch for you?	52.4	7.6	22.2
Does the authority give you an identity card?	85.7	77.8	68.2

Source: CPD/GATE Survey, 2006.

VII. EMPLOYMENT AND INCOME OF WORKERS

WORKING HOURS AND OVERTIME

On average, a normal working day is about 8 hours for both male and female workers in Bangladesh's RMG industry. However, a difference is observed in the case of overtime. When including overtime, the total working hours for female workers is found to be lower than for male workers in all factories. However, the total working hours have decreased for both male and female workers in all factories over time. As compared to data from previous surveys (Paul-Majumder 2003), the total working hours for female workers has decreased from 12 hours in 1997 to 10.6 hours in 2005 (see Table 24). On average, garment workers work longer hours (about 12 hours) than those in the non-export industry (8 hours), and they also work on weekly holidays unlike the non-export industry workers.

According to garment factory owners, due to the nature of the production process and marketing pattern at the retail level, overtime is common in all the factories. Types and designs of clothes frequently change in the international market. Accordingly, garments have to be manufactured and shipped within a strict time limit set by the buyers. In recent years, due to the narrowing of the gap between various marketing (fashion) seasons, the pressure to reduce the lead-time is on the rise. Also, in Bangladesh, a significant portion of apparel is manufactured with imported raw materials. Given Bangladesh's problems such as power shortages, transport-communication snags, inefficient infrastructure and ports, and political unrest, it is difficult to complete orders in a timely fashion if the normal work schedule is interrupted. Entrepreneurs try to ensure on-time delivery by increasing the working hours of workers. As overtime means additional income for workers, they are willing to work the extra hours. Both the owners and workers reported that workers are keen to obtain employment in factories where there are opportunities for working more overtime.

Table 24. Working Hours and Overtime

	Working Hours/Day			Total Working Hours/Day (Including Overtime)		
	2005	***2004***	***2001–03***	***2005***	***2004***	***2001–03***
EPZ						
- Male	8.6	8.6	8.7	11.6	11.6	11.9
- Female	8.2	8.2	8.5	10.6	10.9	11.0
Non-EPZ						
- Male	8.2	8.2	8.1	11.4	11.4	11.6
- Female	8.1	8.1	8.3	10.6	10.7	11.2
Subcontracting						
- Male	8.0	8.0	8.0	11.2	11.2	10.7
- Female	8.0	8.0	8.0	10.6	10.6	10.5
All						
- Male	8.3	8.3	8.3	11.4	11.5	11.8
- Female	8.1	8.1	8.3	10.6	10.7	11.0

Source: CPD/GATE Survey, 2006.

MONTHLY INCOME OF WORKERS

The CPD/GATE survey team selected workers to interview by identifying those who had worked for two years or more. To determine the gender-related differences in wages of workers, it was necessary to examine data related to the same workers over time. Generally, entry-level wages are the same across the gender divide, and it is only at higher wages that the gap tends to appear.

Average monthly income of a male and female garment worker was found to be Tk 4,658.8 and Tk 3,535.5, respectively.[20] The income of RMG workers has increased by 14.1 percent for male and 11.1 percent for female workers during 2004–05 (see Table 27). No worker was found to earn less than Tk 1,000 per month (Tk 930 was the minimum wage at the time of the survey). Most workers earn Tk 3,001–4,000 per month. Fifty percent of female workers and 46.9 percent male workers are in this salary group. The share of women workers is lower in the higher income group and vice versa. Thus, only 3.7 percent of female workers earn more than Tk 5,000 per month, as opposed to 25 percent of male workers. Similarly, 1.9 percent of females earn Tk 1,000–2,000, while no men earn this amount. In fact, in the sample, no male workers earn less than Tk 3,000 per month. As noted, the sample is biased toward skilled workers, and the number of skilled male workers tends to be higher than the number of female skilled workers.

Monthly income for both male and female workers varies according to the factory's location. Workers in the EPZ factories earn more than those in the non-EPZ factories (see Table 25). Education also plays an important role in determining wages of workers (Table 28 and Box 2).

Table 25. Percentages of Surveyed Workers by Income Groups

	EPZ		Non-EPZ		EPZ +non-EPZ		
	Male	***Female***	***Male***	***Female***	***Male***	***Female***	***All***
<1000	-	-	-	-	-	-	-
1000–2000	-	-	-	2.3	-	1.9	1.2
2001–3000	-	36.4	-	20.9	-	24.1	15.1
3001–4000	30.0	27.3	54.5	55.8	46.9	50.0	48.8
4001–5000	30.0	36.4	27.3	16.3	28.1	20.4	23.3
5000+	40.0	-	18.2	4.7	25.0	3.7	11.6

Source: CPD/GATE Survey, 2006.

[20] Average monthly income includes regular income, overtime earnings, housing allowance, medical allowance, transport allowance, production bonuses, festival bonuses, and increments. About 62 percent of total income is basic salary, and 23.8 percent is overtime earnings (see Annex Table 7).

Box 2. Case study 2: Education helps to earn more

Before joining an RMG factory in Dhaka, *Runa Akhter* was a student. One of her relatives gave her information about this job. She is married, in her mid-20s, and has no children. She is working as a sewing supervisor. On average, she works 10 hours a day and earns 4,050 taka per month, which includes wages and other fringe benefits. To earn more money, she prefers to work overtime, but feels that it should not be very long, as she is aware of the need to rest for her physical well-being. Her family has three meals a day and meat or fish three times a week. Her factory pays her salary in the first week of the month and provides her housing allowances, medical allowances, festival bonus, maternity leave, and canteen facilities. She saves a fixed amount of money per month, and she gives loans to her relatives against a high interest rate. She uses the savings for medical treatment and emergency situations.

In her factory, she receives training on fire drills, the operation of machinery, and health and safety. She believes that workers should be given more training to improve their efficiency level and that changes in machinery do not cause significant job losses.

She is aware of the MFA phaseout and believes that it may become difficult to get a job due to a reduced demand for workers by factories. She also feels that many factories may shut down due to the lifting of the quota system. But she is not afraid of losing her job, as she has been educated at the higher secondary level.

In her factory, the Workers' Welfare Committee started in 2005. She feels that such committees may help to raise the wages of workers on the basis of discussions among owners, trade union leaders, and workers. According to her, an increase in salaries and reduction in prices of essential commodities may improve standard of living.

Source: CPD/GATE Survey, 2006.

MALE-FEMALE INCOME GAP

Historically, female workers in the RMG sector have been engaged in low-income jobs that require little or no skill. Thus, the income distribution in the RMG sector is lower for female workers, as the minimum wage for low-skilled workers did not change during 1994–2006. In general, a gender gap exists in wages between male and female workers. According to the Bangladesh Census of Manufacturing Industries (CMI), a female worker in the manufacturing sector earned only 53 percent of a male worker's earnings in 1999–2000 (BBS, 2004). Similar differences prevail in the RMG sector within the same job category. Table 26 shows that a female operator earns 71.3 percent of a male operator's earnings, and a female helper earns only 52.7 percent of a male helper's earnings. Previous studies show that a female operator earned 86.4 percent of a male operator's earnings in 1990 and 68.1 percent of male operator's earnings in 1997 (Zohir and Paul-Majumder 1996; Paul-Majumder 2003). Only in the "others" category was a female worker's earnings more than a male's (a share of 102.8 percent). The category includes iron workers, folders, cleaners, storekeepers, and packers.

Table 26. Monthly Income of Surveyed Workers (Taka)

Characteristics	Male	Female	Female's Share in Male's Income
Type of Factories			
- EPZ	4773.9	3514.7	73.6
- Non-EPZ	4551.3	3531.6	77.6
- Subcontracting	4485.0	3599.0	80.2
Type of Units			
- Knit	5122.7	3589.9	70.1
- Woven	3968.8	3479.0	87.7
- Sweater	5751.4	3568.9	62.1
Size of Factories			
- Large	4749.0	3645.7	76.8
- Medium	5906.0	4722.4	80.0
- Small	4477.3	3338.5	74.6
Education Level			
- Up to SSC	4563.7	3976.4	87.1
Marital Status			
- Married	4561.2	3510.2	76.9
- Unmarried	4704.1	3584.9	76.1
Category of Jobs			
- Operator	5088.2	3626.3	71.3
- Helper	4885.0	2575.0	52.7
- Others*	3765.6	3872.8	102.8
Length of Service			
- Joined before 1999	4905.7	3943.47	80.4
- Joined after 1999	4768.0	3342.08	70.1
Joining year			
- 1999–1995	1360.0	1341.6	98.6
- 1996–2000	2334.8	2065.2	88.5
- 2001–2003	3119.0	2158.9	69.2

* Other category of jobs includes iron man, folder, cleaner and storekeeper and packer.
Source: CPD/GATE Survey, 2006.

Gender differences in earnings in the RMG sector are observed in both EPZ and non-EPZ factories, across all size and types of factories. When compared among various types of factories, the earning gap is larger in the sweater factories, where women earn 62.05 percent of men's earnings. In addition, the earning gap is larger in small factories, when compared with large- and medium-sized factories. The gap in male-female earnings is considerable when education level is considered. It is often claimed that female workers receive lower incomes because they are less educated, less skilled, and less experienced, and thus less efficient or less productive than male workers. However, this is not entirely corroborated by the CPD/GATE survey and interviews; the findings show that a female worker with an education level up to a SSC earns only 87.1 percent of a male worker's income with the equivalent level of education. The BIDS survey reports similar discrimination.

The income gap between male and female workers has widened over the years—not only due to the employment of women workers in lower skilled jobs but also due to less overtime for female workers (see Table 24 and Annex Table 7). During 1991–95, the average salary for a female worker was Tk 1,298 compared with Tk 1,360 for a male worker, implying that a female worker earned 95.4 percent of a male worker's income.

This share steadily decreased during 1996–2005, and, in 2005, women earned 75.9 percent of men's income (see Table 27).

The CPD/GATE survey and earlier studies indicate that the monthly income of male workers has increased at a higher rate compared with female workers. During 1991–2005, male worker monthly salaries increased by 8.8 percent, and female worker salaries increased by 7.2 percent (see Table 27).

Table 27. Monthly Income of Surveyed Workers (Taka)

Year	Monthly Income		Female's Share in Male' s Income	Increase of Income (%)	
	Male	***Female***		***Male***	***Female***
2005	4658.8	3535.5	75.9	14.1	11.1
2004	4084.7	3182.4	77.9	29.0	20.9
2001–2003	3167.2	2450.2	77.4	37.6	20.9
1996–2000	2301.3	2027.1	88.1	69.2	56.2
1991–95	1360.0	1298.0	95.4		
Increase of Income during 1991–2005				**8.8**	**7.2**

Source: CPD/GATE Survey 2006.

The income gap between male and female workers cannot be explained by a simple bi-variate analysis. Therefore, a regression exercise was carried out to determine whether there is a significant difference in RMG workers income because of gender.

RESULTS OF REGRESSION EXERCISE

The CPD/GATE study team carried out a regression analysis to investigate the impact of sex on the wage differential in the RMG sector of Bangladesh. The regression model created uses data gathered in 2005 from interviews with 87 workers, including 16, 56, and 15 workers from knit, woven, and sweater RMG factories, respectively (see Section II for details).

The multiple regression model was specified as:

$$\ln WAGE_i = a + b_1 EXPER_i + b_2 EXPER_i^{\,2} + b_3 GENDER_i + b_4 AGE_i + b_5 MARRIED_i + b_6 SKILL_i + b_7 SIZE_i + b_8 LOCATION_i + b_9 EDU_i + b_{10} \ln WHOUR_i + b_{11} TRAIN_i + e_i$$

where, $WAGE_i$ is the monthly wage of the worker *i*; $EXPER_i$ is the year of working experience of the worker *i*; $WHOUR_i$ is working hours per week of the worker *i*; AGE_i is the age of the worker *i*; *ln* is the natural logarithm operator; and e_i is the error term; $i = 1,2,\cdots,87$

$$GENDER_i = \begin{cases} 1, & if \quad i-th \quad wor\ker \quad is \quad male \\ 0, & if \quad otherwise \end{cases}$$

$$MARRIED = \begin{cases} 1, & if \ i-th \ wor\ker \ is \ married \\ 0, & otherwise \end{cases}$$

$$SKILL_i = \begin{cases} 1, & if\ i-th\ wor\ker\ is\ married \\ 0, & otherwise \end{cases}$$

$$SIZE_i = \begin{cases} 1, & if\ the\ firm\ (where\ i-th\ wor\ker\ is\ employed)\ is\ l\arg e\ in\ size \\ 0, & otherwise \end{cases}$$

$$LOCATION_i = \begin{cases} 1, & if\ the\ firm\ is\ located\ in\ EPZ \\ 0, & i\ otherwise \end{cases}$$

$$EDU_i = \begin{cases} 1, & if\ i-th\ wor\ker\ is\ educated \\ 0, & otherwise \end{cases}$$

$$TRAIN_i = \begin{cases} 1, & if\ i-th\ wor\ker\ has\ received\ in\ house\ training \\ 0, & otherwise \end{cases}$$

Skilled workers are defined as workers who are designated as operators and affiliated with cutting and quality control. It is expected that higher skill and education levels, older age, more training, and a larger sized factory would have positive impact on the wage of a worker. The quadratic function of experience is introduced to capture the increasing/decreasing marginal effects of experience on wage. It is expected that experience would have a positive but diminishing effect on wage (i.e., the coefficient associated with experience would be positive, while the coefficient associated with square of experience would be negative). It is also widely believed that the EPZ factories have better salary structures compared with the non-EPZ factories. Therefore, the coefficient of the LOCATION dummy is anticipated to be positive. Finally, several analyses indicate the existence of a wage gap between males and females globally due to the patriarchal social structure. The problem is particularly true for the developing world. Therefore, the coefficient associated with the SEX dummy is expected to be positive, illustrating a gender bias in the salary structure within the Bangladesh RMG sector.

Of particular interest in this modelling exercise is the investigation of the direction and size of the coefficient of the SEXdummy to explore the existing gender wage differential in the RMG sector. Two versions of the above specified regression model were used. The first version used the gross monthly wage (with taka as the dependent variable), which includes overtime earnings. Accordingly, the independent variable, i.e., working hours ($WHOUR$) is the sum of weekly normal and overtime working hours. The second version used the gross monthly wage less overtime earnings, with the appropriate change in the working hours ($WHOUR$) variable. Hereafter, these two versions are termed as Regression 1 and Regression 2.

Ordinary Least Square (OLS) estimation results of regressions 1 and 2 are presented in Table 28. As shown, under Regression 1, the coefficient of the dummy variable *GENDER* is positive and significant at 1 percent, indicating the existence of a sizeable gender wage differential. The result indicates that the monthly wage of a male worker is 26.2 percent more than that of a female worker with identical characteristics.[21] The

[21] Since dependent variable appears as a natural logarithm, *[exp (coefficient of dummy variable)-1)*100]* was estimated to find the change in percentage equivalent of the dependent variable.

coefficient of *AGE* is positive and significant at 10 percent. For a one-year increase in the age of a worker, wage is likely to rise by 0.013 percent, holding other variables constant. Skill of the worker has positive and statistically significant (at 1 percent) impact indicating that monthly wage of a skilled worker is 19.6 percent more than that of a non-skilled worker. As expected, education is found to have positive and significant (at 10 percent) impact on wage. An educated worker's salary is likely to be 27.5 percent higher than that of an uneducated worker. The impact of training on wage turns out to be positive and statistically significant (at 5 percent). The wage of a trained worker is 17.1 percent more than that of an untrained worker. The coefficient of the dummy variable *MARRIED* is found to be negative and statistically significant at 5 percent level of significance implying that a married person is likely to receive a lower wage. This is particularly important for married women, because in the social structure of Bangladesh, married women bear the primary responsibility for child rearing and other household activities that, in turn, reduces their working hours.

Although the coefficients associated with firm size, experience, working hours, and location bear expected positive signs, they are found to be statistically insignificant. However, the increase in sample size could change their significance level.

Table 28. OLS Estimation Results

Dependent Variable
Regression 1: Natural Logarithm of Monthly Gross Wage (Including Overtime Earnings)
Regression 2: Natural Logarithm of Monthly Gross Wage Less Overtime Earnings

Variable	Regression 1		Regression 2	
	Coefficients (standard error)	***% Equivalent Change***	***Coefficients (standard error)***	***% Equivalent Change***
(Constant)	7.037* (0.997)	7.037	5.272* (1.242)	5.272
EXPERIENCE	0.028 (0.029)		0.032 (0.032)	
$EXPERIENCE^2$	-0.001 (0.002)		-0.002 (0.002)	
SEX	0.233* (0.059)	26.24	0.175* (0.066)	19.12
AGE	0.013*** (0.007)	0.013	0.023* (0.008)	0.023
MARRIED	-0.147** (0.071)	-13.67	-0.164** (0.080)	-15.13
SKILL	0.179* (0.065)	19.60	0.234* (0.074)	26.36
FSIZE	0.028 (0.057)		0.027 (0.063)	
LOCATION	0.032 (0.069)		0.011 (0.078)	
EDUCATION	0.243*** (0.129)	27.51	0.235 (0.146)	
ln WHOUR	0.059 (0.225)		0.380 (0.295)	
TRAIN	0.158** (0.068)	17.12	0.156** (0.080)	16.88
R^2	0.44		0.39	

No. of Observations	**87**		**87**	

Notes:
1. WHOUR (working hour per week) includes overtime work in Regression 1.
2. WHOUR does not include overtime work in Regression 2.
3. *, **, and *** denote a 1, 5, and 10 percent level of significance, respectively.
4. In the case of dummy variables, percentage equivalent change of the dependent variable (in natural logarithm) is found by estimating *{exp(coefficient)-1}*100.*
Source: CPD/GATE Survey, 2006.

For Regression 2, the conclusions are similar to those of Regression 1, except for education. In this case, education shows a positive but insignificant impact on wage. However, the major variable of interest lies in the gender differential, and it appears that the monthly wage of a female worker is 19.1 percent lower than that of a male worker (statistically significant at 1 percent). For other variables, the magnitude of the coefficients varies for both regressions, but, more important, they show the expected sign and statistical significance in both cases. However, the explanatory power of Regression 2 is lower compared with Regression 1, as revealed by their respective R-square values.

Note that the coefficients on the variables included in the multiple regression analysis have ceteris paribas or a partial interpretation. To understand the real picture of gender bias in wage structure, the joint impact of several factors on gender wage differential needs to be taken into account. For example, women, particularly those who are from poor households, generally have less access to education and other performance-enhancing training. Table 29 reveals that among 55 surveyed female workers, 4 (7.3 percent) have no education, 48 (87.3 percent) have up to a SSC level of education, and only 3 (5.4percent) have above a SSC level of education. On the other hand, the corresponding figures for 32 surveyed male workers are 0, 27 (84.4 percent), and 5 (15.6 percent). These figures again demonstrate the disadvantageous position of women in Bangladeshi society, and the positive impact of education on wages is likely to amplify the prevailing wage differential among male and female workers, given the lower level of education of women. However, increased education has not been proven to reduce gender differentials in terms of income, as noted in the discussion on the male-female income gap (page 40). Apart from the variables presented in Table 29, a factor could also be the attitude of employers to pay female workers less than male workers (Paul-Majumder and Begum, 2006; Paul-Majumder, 2003; 2002; 1996). These factors cannot be explained through any quantitative exercise.

Table 29. Gender Disparity in Education Level of Apparel Workers

	Education			
	No education	***Below SSC level***	***Above SSC level***	***Total***
Female	4 (7.3%)	48 (87.3%)	3 (5.4%)	55 (100.0%)
Male	0 (0)	27 (84.4%)	5 (15.6%)	32 (100.0%)

Source: CPD/GATE Survey, 2006.

TRAINING OF WORKERS

Income depends on the level of skill and training the garment workers possess. As there is no formal training institute for RMG workers, workers typically receive on-the-job

training. The CPD/GATE survey found that more than 80 percent of workers received in-house training; of those workers, 89.1 percent were female workers and 65.6 percent were male workers. These trainings covered a number of activities including the operation of new machines and learning about new production processes, cutting, sewing, production engineering, fire drills, health safety, and maintaining the first aid box as well as health and hygiene.

VIII. WORKING CONDITIONS AND LIVELIHOOD

TERMS OF EMPLOYMENT

Due to the nature of the global apparel market, the work pattern of garment factories tends to be seasonal in character. Demand for labor varies according to the timing and size of orders. Workers are recruited when they are required and terminated when the number of orders declines (the number terminated depends on the size of the reduction in orders). While most large factories have orders from buyers throughout the year, smaller factories do not always have work orders. Many large factories source their own fabric and sell directly to the buyers. Medium-sized factories tend to work on a CM basis for importers or buying agents. However, the smaller factories either sell to buying agents or work as subcontractors for larger firms. There are about 1,200 factories that work as subcontractors for large- and medium-sized firms. When there are fewer orders, large factories try to deliver the products themselves. In such situations, subcontracting firms sit idle and are often forced to lay off workers.

Recruitment in the garment factories is done mainly informally. In most cases, workers are not given an appointment letter. The limited survey carried out for this study shows that only 26.4 percent workers had received an appointment letter, of which 27.3 percent are male and 25 percent are female. This is an improvement in comparison with earlier findings, which reported that only 5.4 and 4.9 percent of males and females, respectively, received appointment letters (Paul-Majumder 2003). Another study showed that the informal recruitment process is more widespread in the garment sector than in non-export industries, as it allows the owner to avoid paying retrenchment benefits under labor laws. Seventy-five percent of females and 57 percent of males in the garment sector were hired informally compared with 19 and 24 percent, respectively, in the non-export industry (Paul-Majumder and Begum, 2000).

The terms and conditions of employment, though in most cases informal, are stringent. There is provision for a weekly holiday. However, workers often cannot enjoy the weekly holiday due to additional work and overtime. The CPD/GATE survey showed that about 87 percent of workers reported enjoying a weekly holiday. Male workers took fewer weekly holidays (32.4 percent) compared with female workers (67.6 percent). Gender discrimination also exists in the granting of leave. Thirty-five percent of females compared with 60 percent of males were granted paid leave (Paul-Majumder and Begum, 2000). Though 87.3 percent of female workers reported receiving maternity leave, only 43 percent were granted paid maternity leave. Termination is very common, and workers are not always informed prior to being laid off. About 24 percent of workers reported that notices are served before the lay off. It was found that, in many instances, payment of salary was neither regular nor on time. Only 54 percent of the workers surveyed had received salary during the first week of the month, while 2.5 percent reported receiving salary during the fourth week of the month (see Table 30 on page 48). One reason for not paying salary on time, particularly overtime salary, was that the turnover of workers is high in garment factories due to competition for skilled labor, so late payment is often used to discourage turnover.

WORKERS' TRADE UNION RIGHTS

As a result of pressure from workers, buyers, consumers, and organizations such as the American Federation of Labor-Congress of Industrial Organizations, trade unions (TUs) are now permitted to work in EPZs. These unions take the form of Workers' Welfare Committees (WWCs). Traditionally, TUs have been active among RMGs in non-EPZ factories. Of the seventeen TUs that work with RMG workers, only a few are active in EPZs. Though 26.4 percent of the workers surveyed reported that there is a WWC in their respective factories, no workers interviewed were active members of those committees (see Table 30), though workers expect their wages and benefits be negotiated successfully through the WWC (Box 3).

Box 3. Case study 3: Expectation for improved living standard

Saraswati, age 35 and a mother of two children, works in the sewing section as a helper in a woven garment factory in Dhaka. She has a primary education. She is working at the factory, as she has no alternative choices. Before joining the factory, Saraswati was a housewife. Her husband is also a garment worker. Her mother-in-law looks after her children. One of her daughters goes to school.

Her productivity rate is 300 pieces per day. She works eight hours a day, plus three hours in overtime per day. She thinks that all workers in her section work at their maximum productivity level. Usually, she wants to work for only a fixed overtime period, as she has family responsibilities. Like many other factories, her factory is also introducing new machinery. She thinks that new machines will require more laborers, creating new jobs. Therefore, she is not afraid of job loss.

Saraswati's monthly income is 1,450 taka, which she receives in the first week of each month. However, this is not enough for a decent living for her family, as three members of her family are dependent on her income. When asked about the minimum wage, she responded that it should be at least 2,000 taka per month. But she is satisfied with the other facilities that her factory provides, such as the promotion of workers, maternity leave, health support, and the prior notification of being laid off. There are two emergency exits in her factory, but the authority usually keeps those under lock. There is no Worker's Welfare Committee (WWC) in her factory. She reported that the management does not allow workers to be involved in any type of trade union activities. But she feels that a trade union or WWC could help workers to raise their bargaining power. To improve the living standard, the factory should revise the wages of workers. She thinks that BGMEA should pressure the factory owners to revise their wages. She is not afraid of the MFA phaseout and has not taken any step to prepare for it.

Source: CPD/GATE Survey, 2006.

HEALTH AND NUTRITION STATUS

About 17 percent of workers reported having suffered from some type of illness due to their work in the factory. The number of sick female workers (21.8 percent) was found to be higher than the number of male workers (9.4 percent); this difference reflects women's overall health condition in Bangladesh, where women's intake of nutritious food is lower than men's intake, as women eat last in the family and only eat the leftovers. This social practice contributes to the frequency of health problems found among female workers. Skin problems, headaches, gastric ailments, and fatigue are common illnesses among workers. These diseases occur due to dust, concentration on stitching for long periods, irregular food habits, and poor health conditions in general. All male workers receive treatment for their illnesses, while only 41.7 percent of female

workers reported receiving treatment; this is not only due to women's ignorance about health but also due to social attitudes regarding the importance of women's good health. This data also reflects that women are more tolerant and less demanding. In many cases, the management has provided the cost of treatment. The nutritional status of garment workers was found to be low. On average, workers were able to afford fish or meat for about three days per week. About 65 percent of workers believed that their income was not enough to guarantee a decent living (see Table 30).

LIVELIHOOD CONDITIONS

There is a gap in the expectations of male and female surveyed workers regarding income. Female workers were found to be less ambitious in terms of their expectations for remuneration. This reflects the outlook women posses in the existing socio-economic reality where women are discriminated. The expected salaries of a male and female worker were found to be Tk 5,227 and Tk 4,270 per month, respectively.

Even with limited incomes, workers try to save. The propensity to save is greater for women than men. About 80.0 percent of female workers reported saving some income compared with 65.6 percent of male workers. Traditionally, women in Bangladesh are more concerned about the welfare of their families and thus have a propensity to save more than men. This practice has contributed to the success of micro-credit programs (such as the Grameen Bank) in Bangladesh, where women are the major borrowers. Unmarried female workers also save part of their salaries for paying dowry (Afsar, 1998).

Table 30. Working Conditions (% of Surveyed Respondents)

Indicators	Male	Female	All
Get in-house training after joining	65.6	89.1	80.5
Company gives appointment letter	27.3	25.0	26.4
Workers get notice prior to lay off	25.0	23.0	24.1
Date of salary payment			
- 1st week of the month	62.5	49.1	54.0
- 2nd week of the month	20.9	47.3	38.5
- 3rd week of the month	8.3	3.6	5.0
- 4th week of the month	8.3	0	2.5
Have savings from income	65.6	80.0	74.7
Wage is sufficient for a decent living	31.3	38.2	35.6
Expected minimum wage (Tk/month)	5227.3	4270.6	4646.4
Have weekly holiday	32.4	67.6	87.1
Company gives maternity leave		87.3	
Paid maternity leave		43	
No. of times eating fish or meat/per week	3.2	3.5	3.4
Have workers welfare committee			26.4
Not actively involved in a trade union	100	100	100
Suffering from diseases due to work in factory	9.4	21.8	17.2
Type of disease			
- Skin			13.3
- Headache			20.0
- Gastric			20.0
- Weakness			6.7
- Other			40.0
Receive any treatment	100	41.7	46.66

Support by management			
- Cost of treatment	0	28.6	
- Specialized doctor's service	50.0	28.6	22.2
- Medicine	50.0	42.9	

Source: CPD/GATE Survey, 2006.

IX. POST-MFA SCENARIO: IMPLICATIONS FOR WOMEN'S EMPLOYMENT AND POLICY PERSPECTIVES

Having started in an unfavorable environment characterized by inward looking industrial policy, the RMG sector has flourished over the years with impressive performance. This has been possible through a subsequent policy shift in the country, favoring an export-led economy. Over the years, entrepreneurial ingenuity, the presence of MFA quotas, preferential market access under the GSP, and low wages have combined to create an opportunity for Bangladesh to become a major global player in the apparel market. Facing the potential loss of export markets and worker retrenchment following the quota phaseout in December 2004, the RMG sector of Bangladesh has been able to survive the potential crisis with commendable resilience and success. In fact, the value of exports increased from 2004 to 2005 for all types of RMGs. The average income of factories has also increased. The EU remains the major export destination of Bangladeshi apparel, though the share has declined. Exports to Canada and the U.S. have been increasing in recent years.

In reflection of reduced profit margins, entrepreneurs are relying more on volume expansion to retain a market share. The sector is trying to reposition itself in the global market through restructuring and productivity-enhancing measures. A visible shift is taking place from woven to knit items. The shift to knitwear and sweaters is likely to have implications in terms of labor absorption, as knitwear factories employ more male labor than woven wear factories, where female labor is predominant. Female workers are also worse off in such situations because most women workers have little or no skills and have little or no training, and thus are less equipped to work with new technologies.

The CPD/GATE survey revealed that female workers are more engaged as operators, and fewer female workers receive on-the-job training compared with male workers. This gap was also found in an examination of workers' income, which revealed that male workers earn higher incomes. While participation in lower skilled activities due to less training is the apparent reason for women's disadvantageous situation regarding income, gender discrimination also plays a role.

Technological changes have not yet had negative implications for female employment, as export growth has primarily been volume-driven (rather than unit-cost driven). However, the survey interviews revealed that as Bangladesh tries to remain competitive in the face of "the race to the bottom" pricing, the emphasis on upgrading skills and technology (potentially causing labor displacement) is likely to increase. Both these factors are likely to have negative implications for the employment and future absorption of female labor. In this context, policy initiatives to develop the RMG sector need to include the goal of a gendered-balanced impact. Some challenges and specific recommendations coming out of the study findings are mentioned below.

1. Lack of capacity to upgrade the skills of RMG workers, particularly female workers, undermines the competitive capacity of the industry, as it results in low productivity and low capacity of the sector to enter the higher value added segment of the global market. Women workers need education and training to be employed as supervisors and quality controllers. This effort will help to reduce the gender gap in wage rates and reduce poverty among women. However, even with more education, women workers obtain the lowest category of jobs, such as helpers, due to their lack of skills. Women have to acquire on-the-job training to be promoted to higher categories of jobs. Therefore, the establishment of training institutes by the private sector and NGOs is essential for the long-term sustainability of the sector, as it will help increase high value items and enable women to move up to within the sector.

1. Female workers are deprived of their rights and needs more than male workers. This is manifested directly through gender differentials in income and deprivation of other minimum requirements. Women workers should be given paid maternity leave along with other entitlements such as a minimum wage, appointment letter, weekly holidays, and transportation facilities—particularly to return home at night, medical, and child care facilities. More women suffer from health problems due to working in the garment factory, but fewer female workers receive any treatment compared with male workers. Non-compliance by factory owners regarding a clean and hygienic working environment and the lack of health care facilities cause health problems. The government, NGOs, and BGMEA could respond by establishing a hospital exclusively for garment workers.
2. Implementation of the minimum wage is essential for improving the economic condition of workers. Female workers are particularly poverty stricken, as they earn less. The new minimum wage package announced in October 2006 is not proposing enough to live above the poverty level.[22]
3. Given the discrimination that women could experience if the garment industry acquires more advanced technology, it has been suggested that the government institute policies to ensure the equal participation of males and females and to encourage training initiatives for women workers to maintain their share of employment in the garment industry. The BGMEA and NGOs could provide the training to workers.
4. Poor health conditions among garment workers arise mainly from long working hours, which curtail workers' leisure and resting time. As overtime work cannot be avoided due to the pressure on entrepreneurs to deliver products on time, the factory owners could begin a two-shift working system instead of giving the same worker overtime. However, an earlier study (Paul-Majumder and Begum, 2006) revealed that most entrepreneurs are unwilling to introduce a two-shift working system, as there is an acute shortage of skilled workers. This situation reiterates the need for training workers. Providing training would create a win-win situation, as using skilled workers ultimately means achieving higher productivity and better

[22] A minimum of US$1 per day is required to be considered above the absolute poverty level.

quality products, with less errors involved—which ultimately contributes to workers' income.

Table 31. Policy Action Matrix for Female Participation in the RMG Sector

Constraints	Actions	Activities	Gender Indicators	Responsible Agencies
Less Training	Make training available for women	• Provide training to women RMG workers in order to be absorbed into higher-skilled jobs	• More trained female workers • Employment of women workers in higher categories of jobs	• Government of Bangladesh (GOB) • BGMEA • NGOs
Lower Income	Increase the income of women workers	• Employ women in a skilled category	• Women workers receive more income • Women receive equal salary for the same job as men • Income gap between male and female workers reduced • Women can have more savings and thus a welfare increase of the family	• Factory owners • GOB to monitor • NGOs to monitor • Trade unions
Poor Health Condition	Improve health of workers	• Provide health care • Establish a hospital exclusively for RMG workers • Establish a primary health care center in each factory	• More women receive medical facilities • Health conditions of female workers improve • Women workers can work for a longer period if they are in good health	• GOB • BGMEA • NGOs • Trade unions
Limited Leave Provision	Provide leave facilities	• Sanction leave for women workers whenever needed under the service rule • Allow maternity leave for three months with full pay, as per GOB's rule	• Women feel less constrained to work with leave opportunities • More women employed in the RMG sector	• Factory owners • BGMEA • NGOs to oversee the implement-ation
Delayed Payment of Salary	Pay workers on time	• Pay salaries of workers within the first week of each month • Pay overtime payment along with the monthly wages	• Women receive their salary in the beginning of the month and can plan for the month	• Factory owners • BGMEA • Trade unions

ANNEX

Annex Table 1. Age Distribution of Surveyed Workers by Gender by Location and Type of Factory

Age Group	Male		Female		Total	
Knit						
	Number	*%*	*Number*	*%*	*Number*	*%*
<20	2	28.6	1	11.1	3	18.8
20–25	1	14.3	5	55.6	6	37.5
26–30	3	42.9	3	33.3	6	37.5
31–35	0	0	0	0	0	0
36–40	1	14.3	0	0	1	6.3
>40	0	0	0	0	0	0
Woven						
	Number	*%*	*Number*	*%*	*Number*	*%*
<20	0	0	3	7.7	3	5.4
20–25	9	52.9	18	46.2	27	48.2
26–30	4	23.5	14	35.9	18	32.1
31–35	4	23.5	2	5.1	6	10.7
36–40	0	0	2	5.1	2	3.6
>40	0	0	0	0	0	0
Sweater						
	Number	*%*	*Number*	*%*	*Number*	*%*
<20	0	0	1	14.3	1	6.7
20–25	2	25.0	5	71.4	7	46.7
26–30	6	75.0	1	14.3	7	46.7
31–35	0	0	0	0	0	0
36–40	0	0	0	0	0	0
>40	0	0	0	0	0	0

Source: CPD/Gate Survey, 2006.

Annex Table 2. Distribution of Surveyed Workers by Marital Status by Location and Type of Factory

Unit	Sex of the Respondent	Marital Status				Total	
		Married		*Unmarried*			
		Number	***%***	***Number***	***%***	***Number***	***%***
Knit	Male	4	57.1	3	42.9	7	100
	Female	6	66.7	3	33.3	9	100
Woven	Male	12	70.6	5	29.4	17	100
	Female	31	79.5	8	20.5	31	100
Sweater	Male	3	37.5	5	62.5	8	100
	Female	5	71.4	2	28.6	7	100

Source: CPD/Gate Survey, 2006.

Annex Table 3. Distribution of surveyed workers by Marital Status (by Type of Factory, Sex, Age Group) (in Years)

Age Group	<20	20–25	26–30	31–35	36–40
Knit (% of sample in Knit Factories)					
Male					
Married	0 (0.0)	0 (0.0)	3(18.7)		1(6.3)
Unmarried	2 (12.5)	1 (6.25)	0(0.0)		0(0.0)
Total	2 (12.5)	1(6.25)	3(18.8)		1(6.3)
Female					
Married	0 (0.0)	4(25.0)	2(12.5)		0(0.0)
Unmarried	1(6.3)	1(6.3)	1(6.3)		0(0.0)
Total	1(6.3)	5(31.3)	3(18.8)		0(0.0)
Woven (% of sample in Woven Factories)					
Male					
Married	0(0.0)	4(8.7)	4(8.7)	4(8.7)	2(4.4)
Unmarried	0(0.0)	5(10.9)	0(0.0)	0(0.0)	0(0.0)
Total	0(0.0)	9(19.6)	4(8.7)	4(0.0)	2(4.4)
Female					
Married	1(2.2)	13(28.3)	13(28.3)	2(4.4)	2(4.4)
Unmarried	2(4.3)	5(10.9)	1(2.2)	0(0.0)	0(0.0)
Total	3(6.5)	18(19.6)	14(30.4)	2(4.4)	2(4.4)
Sweater (% of sample in Sweater Factories)					
Male					
Married		0(0.0)	3(20.0)		
Unmarried		2(13.3)	3(20.0)		
Total		2(13.3)	6(40.0)		
Female					
Married	1(6.7)	4(26.7)	1(6.7)		
Unmarried	0(0.0)	1(6.7)	0(0.0)		
Total	1(6.7)	5(33.3)	1(6.7)		

Note: The number in the parentheses indicates the percentage of the total workers in respective sectors.
Source: CPD/GATE Survey, 2006.

Annex Table 4. Position of Surveyed Workers by Educational Qualification (%)

Educational Level	EPZ				Non-EPZ			
	Operator	***Helper***	***Packer***	***Others***	***Operator***	***Helper***	***Packer***	***Others***
No Education	0.0	0.0	0.0	0.0	6.5	50.0	0.0	0.0
Primary	23.1	0.0	0.0	0.0	45.7	0.0	66.7	13.3
Up to Class Ten	30.8	100.0	0.0	0.0	30.4	50.0	33.3	26.7
SSC	38.5	0.0	0.0	33.3	13.0	0.0	0.0	40.0
Up to Class Twelve	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HSC	7.7	0.0	0.0	33.3	2.2	0.0	0.0	20.0
Degree Level	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bachelor and Above	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0

Source: CPD Survey, 2006.

Annex Table 5. Job Losses due to Changes in Machinery by Type of Factory (No and % of Respondents)

Size of Factory	Knit						Woven								Sweater					
	EPZ		*Non-EPZ*				*EPZ*				*Non-EPZ*				*EPZ*		*Non-EPZ*			
	No		*Yes*		*No*		*Yes*		*No*		*Yes*		*No*		*No*		*Yes*		*No*	
	No	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*
Large	1	100	0	0.0	1	100	2	50	2	50	1	14.3	7	85.7	0	0.0	1	33.3	2	66.7
Medium	0	0.0	0	0.0	3	100	1	100	0	0	2	50.0	2	50.0	0	0.0	0	0.0	2	100
Small	1	100	1	33.3	2	66.7	0	0	1	100	2	25.0	6	75.0	1	100	0	0.0	0	0.0
Total Sample	2	100	1	14.3	6	85.7	3	50	3	50	5	25.0	15	75.0	1	100	1	20.0	4	80.0

Source: CPD Survey, 2006.

Annex Table 6. Import of Sewing Machines in Different Years

	2002	2003	2004	2005*	2006	Change during 2002–2006 (%)
Total Import (in Kilograms)	2,725,945	2,603,393	5,018,304	4,302,652	4,233,959	11.1
No. of Total Importers	3,867	3,812	4,337	6,236	6,840	15.4
Imports per Importer (in Kilograms)	705	683	1,157	690	619	
Unit Value of Machines (US$/Kilograms)	616	747	680	669	782	5.4

Note: Information on import of machineries in 2005 is partial, as some import information has been excluded because of different measuring unit.
Source: CPD Database.

Annex Table 7. Breakdown of Monthly Income for Surveyed Worker

	EPZ		Non EPZ		Subcontracting	
	Male	***Female***	***Male***	***Female***	***Male***	***Female***
Wage	2169.0	1728.9	2334.3	1750.0	2052.6	1833.6
Overtime	1392.1	881.5	1118.6	902.9	1173.9	887.7
Housing Allowance	637.7	504.5	677.9	525.4	679.6	550.4
Medical Allowance	135.0	136.4	152.3	132.6	150.0	135.0
Transport Allowance	90.5	60.0	0.0	3.5	53.6	0.0
Production Bonus	99.7	44.0	42.3	19.4	14.3	7.5
Festive Bonus	96.9	110.1	151.5	136.5	154.0	156.5
Increment	3.0	18.2	0.0	0.0	0.0	0.0
Others	150.0	45.5	74.6	61.4	207.1	28.3
Deduction	0.0	0.0	0.0	0.0	0.0	0.0
Effective Salary	**4773.9**	**3528.9**	**4551.3**	**3531.6**	**4485.0**	**3599.0**

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